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# **Labor Markets in an Era of Adjustment**

## **An Overview**

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This overview of a symposium on labor markets and adjustment concludes that: (1) real wages are more flexible than generally supposed, (2) labor reallocations across sectors have been more or less in the desired direction, and (3) the role of labor unions, generally supposed to be an impediment to adjustment, is more subtle than generally supposed.

This paper — a product of Studies and Training Design Division, Economic Development Institute — is part of a larger effort in PRE to understand the behavior of labor markets in the process of structural adjustment of the economy. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Marshall Schreier, room M4-023, extension 36432 (70 pages, with figures).

Horton, Kanbur, and Mazumdar have written an overview of 19 papers in a symposium devoted to an examination of the interaction between labor markets and adjustment. The purpose of their commentary is to draw general conclusions and policy lessons and to identify areas for further research.

The papers include 7 issue papers and 12 country studies (Argentina, Brazil, Bolivia, Chile, Costa Rica, Côte d'Ivoire, Egypt, Ghana, Kenya, Korea, Malaysia, and Thailand). The country studies bring together a wealth of information that will be useful to researchers.

The evidence on real wages casts considerable doubt on theoretical concerns about aggregate real wage rigidity and labor market inflexibility as a hindrance to adjustment. Declines in real wages have been dramatic and often far greater than the fall in GDP. For some countries, the declines in real wages may have been large enough to have aggregate demand effects that inhibit recovery.

The country studies find that, by and large, sectoral employment shifts have been in the desired direction, that is, towards tradables.

In contrast to the general view of labor unions as an impediment to adjustment, the papers in this symposium present a more varied

and subtle picture. Union responses to adjustment programs range from militant opposition to active cooperation. And the strength of unions need not bear any simple relation to the prospects for recovery.

While in some Latin American countries (Argentina and Brazil), unions receive the blame for lack of adjustment, in Costa Rica their presence did not prevent moderate adjustment. And in Bolivia, much labor legislation was dismantled, yet a strong recovery has not yet begun. In Africa and particularly in Asia, the studies do not see unions as major obstacles to adjustment in the aggregative sense.

The studies also discuss the consequences of labor market adjustment on income distribution, gender, and human capital. The conclusions here are less clear-cut.

The issue papers highlight complexities that point to country-specific answers. While real wage declines will worsen poverty, improvement in the rural-urban terms of trade during adjustment will have the opposite effect. Similarly, while employment shrinkages in general are likely to affect women adversely, given their weaker attachment to labor markets, a high female-labor intensity of tradables can serve as a countervailing force.

The PRE Working Paper Series disseminates the findings of work under way in the Bank's Policy, Research, and External Affairs Complex. An objective of the series is to get these findings out quickly, even if presentations are less than fully polished. The findings, interpretations, and conclusions in these papers do not necessarily represent official Bank policy.

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Labor markets play a central role in determining the macroeconomic success of stabilization and adjustment policies, and in mediating the impact of these policies on the standards of living of the population--in particular, the poor. The seven issue papers and twelve country studies in this symposium are devoted to an examination of different aspects of this interaction between labor markets and adjustment. The object of this paper is to provide an overview of these nineteen papers, and to draw out general conclusions, policy lessons and areas for further research.

## I. Introduction: Issues and Country Studies

### I.1 Issues

To start with, let us define what we mean by adjustment and by labor markets. Under adjustment we include both stabilization and structural adjustment. Following convention, by stabilization we mean the reduction of national expenditure to bring it into line with national income or output. By structural adjustment we mean attempts to increase national income or output through more efficient use of resources. Of course, a myriad of macro policy instruments, such as exchange rates, monetary policy and fiscal policy are available to achieve these goals, which may sometimes be stated in terms of inflation, balance of payments and growth targets. The links between instruments and targets, however, almost always touch on labor markets and their operation.

A labor market is a mechanism for matching the supply and demand of the factor of production labor, through the terms of the contract between buyer and seller. Since there are many different types of labor, differentiated by skill, location, gender, etc. there are many different labor markets. But these markets are linked with each other since conditions in one can influence the workings of another. The system of interlinked individual labor markets in a country can

perhaps be called "the labor market." The labor market is itself linked to other markets in the economy--it influences their workings and is in turn influenced by them.

The terms of the contract between buyers and sellers in a labor market can vary, from wage payment in markets for unskilled labor to complex packages of remuneration and benefits over time in markets for skilled labor. The markets can vary in structure, from many buyers and many sellers to small groups of buyers and sellers. Some analysts talk of "internal labor markets" within large firms. National policy and regulation affects the workings of the labor market, and the labor market in turn throws up institutions which become important in setting national policy. While any individual labor market may be small, the outcomes in the labor market as a whole can influence macroeconomic conditions in the economy. Since the outcomes determine the payment to labor, they also affect the distribution of income in the economy.

Policy makers are often interested in knowing whether the labor market in a country is "working well," and what can be done to "improve" its workings. But what does it mean to say that the labor market is working well? As always, a general characterization is difficult. The most general statement we can make is in the context of a competitive general equilibrium model of the economy. In this stylized setting, we know that if every other market operates in the manner of classical competitive markets, then if the labor market also operates in this manner the economy will achieve a Pareto optimal outcome. Thus in this framework and under these conditions it is clear what is meant by the labor market working well--it is that the labor market is working like a classical competitive market where price adjusts to equate supply and demand. In fact, in most practical settings, this is indeed the test that is applied, and

discussion of policy and regulation is highly colored by the use of this benchmark. But the slightest reflection should make clear how fragile this benchmark is, and how severe and unrealistic are the conditions under which it is viable, since in reality there is no guarantee that other markets are themselves working like classical competitive markets, and a Pareto optimal outcome may not satisfy distributional criteria for evaluating the economic system as a whole.

Since the search for any general characterization is likely to prove futile, it is best to approach the analysis with a more specific notion of what is being asked of the labor market, given the structure of other markets in the economic system, and the particular economic policy problem under consideration. The particular policy problems we focus on in this symposium are those of stabilization and structural adjustment through the use of macroeconomic policy instruments.

We discuss first stabilization. The role of the labor market here is to ensure that the reduction in national expenditure takes place without inducing a substantial reduction in national output. The basic mechanisms here are well known. As national expenditure falls there will be downward pressure on output prices if output markets behave like classical competitive markets. This downward pressure on output prices will lead to cutbacks in production and hence in the demand for labor. If the price of labor falls in response to this reduced demand, then this reduction in cost will help maintain the level of production. In fact, if the price of labor falls sufficiently in relation to the original fall in output prices, under certain conditions there need be no fall in total output at all. To the extent that the "real wage" does not fall this far, total output will be lower than it otherwise would be and, because of unemployment,

the wage bill will be distributed more unequally than it otherwise would be.

In this framework, therefore, the test for whether the labor market was "working well" would focus on whether the real wage fell sufficiently to maintain employment and output in the face of a reduction in total national expenditures (Addison and Demery, Azam). Clearly, labor market institutions are relevant here. If the labor market is unionized, and the union cares more about the real wage of employed members than about the numbers of the unemployed, then bargaining between the union and employers will lead to a real wage which is too high for maintaining employment and output (Nelson). The extent to which the union can indeed be sanguine about the unemployed will in turn depend on the nature and extent of unemployment benefit. Wage indexation is also relevant. To the extent that automatic wage adjustments, mandated by national law or agreed by employers as part of a long term contract, stop the real wage from falling, there will be unemployment and output loss (Devereux). Also important is how much of the labor market is covered by these adjustments.

Although a fall in demand will lead to unemployment in a particular labor market if the real wage in that market does not fall, at the macroeconomic level the real wage is also one of the determinants of aggregate demand. The mechanism (as developed by Taylor, 1988, for example) depends on the assumption that the propensity to save is markedly lower for wage earners than for recipients of profits. If falling real wages are accompanied by a fall in the share of wages in national income, the aggregate demand will fall. Thus, we may see persistent unemployment despite large falls in real wages. The conclusion to be drawn from the coexistence of these phenomena is not therefore necessarily that the labor market is not working well, and that if only real wages fell even further unemployment would go down, but that beyond a certain point the macroeconomic

consequences of real wage declines may lead to an additional cost of adjustment that relies too heavily on labor markets.

Another case where observed unemployment does not necessarily mean that the labor market is not working well is where output markets do not behave like classical competitive markets. When there is imperfect competition in product markets unemployment may result even if labor markets are competitive with flexible real wages (Azam). With persistent unemployment, therefore, the finger of blame can point to at least one of three factors--imperfectly competitive product markets, aggregate demand feedback from real wages, or labor markets not working well. There is no automatic presumption that the root cause is the last of these.

Let us turn now to the role of labor markets in the process of structural adjustment. Structural adjustment has many components, but at its heart is a shift in the composition of national output towards the production of exportables and import competing output (tradeables) through the use of relative price instruments such as the exchange rate. Clearly, such a shift in the pattern of production requires a corresponding shift in factors of production towards certain sectors, and it is the labor market through which the sectoral composition of labor use is altered. The general issue to which this gives rise is the nature and extent of reallocations between different labor markets. Essentially, what is required is for labor to flow to the production of tradeables i.e. to flow to those labor markets that serve the production of tradeables. This may require reallocation across firms in the same area, across the formal/informal or covered/uncovered divide, or across regions.

In principle, this reallocation could take place through a number of mechanisms. But economic analysis focuses on the role of temporary wage



differentials in attracting labor to markets where demand is high. Notice, however, that the very reallocation to which the differentials give rise will tend to mitigate the differentials. If the wage differentials are constrained between limits because of institutional factors, standard results on the impact of relative output price changes in the composition of employment and output will not obtain (Edwards and Edwards). The same would happen if gender differences led to significant misallocation of labor (Collier). Movements in relative wages can therefore be a deceptive test of whether the labor market is working well. It is far better to concentrate directly on the nature and extent of reallocation between output sectors. The faster this reallocation, the faster will the desired adjustment in national output take place. However, labor is only one of the factors of production and care must be taken before one pronounces that because labor reallocation has not taken place the labor market is "not working well"--if markets for complementary inputs (e.g. credit) are not playing their role, the labor market may be hampered in achieving the desired reallocation of labor and therefore of output.

Whatever the role of the labor market in achieving the macroeconomic objectives of stabilization and structural adjustment, how the labor market responds to macroeconomic instruments will certainly determine the distribution of income in the economy. At the simplest level, if stabilization necessitates a period of high unemployment because of downwardly rigid wages, then there will be an increase in inequality on this count, and perhaps a greater increase in poverty than if real wages had fallen sufficiently to maintain employment. The reallocation of labor across sectors, its extent and nature, will also influence the distribution of income. If, for example, the initial situation is such that the poor are concentrated in the production of tradeable sectors, then the

increase in wages necessary to attract labor to that sector will reduce poverty on this count in the short to medium run, although what happens in the long run depends on how markets for other factors operate. One can conduct a systematic analysis of the impact of adjustment on poverty in the presence of a variety of labor market structures (Addison-Demery). To the extent that the labor market is segmented along gender lines, there will be consequences for the distribution of income as well (Collier).

It has now come to be realized that stabilization and structural adjustment policies, although designed to achieve macroeconomic balance in the short and medium term, will have long run consequences through their impact on investment. To the extent that investment in human capital is affected by unemployment and sectoral reallocation of labor, the labor market will again play a role in mediating the long run consequences of short run policy (Buffie).

## I.2 Country Studies

The interactions between labor markets and adjustment thus throw up a number of interesting issues and questions. The answers to many of these questions will be context and country specific. The issue papers in this symposium take up specific conceptual matters and develop or review the analysis on areas highlighted in this section. The country studies, however, are at the heart of this symposium, since they confront the conceptual framework with reality. Each country study was asked first of all to give a brief account of the adjustment process--the nature of the shock, the policy responses and the macroeconomic outcomes. The authors were then asked to give an account of the relevant characteristics of the labor market--for example, labor force composition, wage differentials and wage setting mechanisms. Armed with these two accounts, the studies then provided an assessment of the role of the labor

market in the adjustment process, paying due attention to institutional features. With these basics, the studies were also asked to evaluate the impact of adjustment, as mediated by the labor market, on poverty and on women. Finally, they were invited to consider the long-run consequences of labor market adjustment.

There are twelve country studies in this symposium: four from Africa (including three from sub-Saharan Africa), five from Latin America, and three from Asia. The countries span a range of different income levels, ranging from two low income countries (using the World Bank's classification, namely Kenya and Ghana), seven lower middle income countries (Bolivia, Egypt, Cote d'Ivoire, Thailand, Chile, Costa Rica and Malaysia), and three upper middle income countries (Brazil, Argentina and Korea). The countries also span a range of adjustment experience, which we will discuss presently.

Not all of the country studies address all of the issues, sometimes because particular issues were important in particular countries but not in others, and sometimes due to data limitations. Almost all of the Latin countries, many of those in South East Asia, and some in North Africa have periodic labor force surveys, although the data from these vary in terms of accessibility and amount of previous analysis. Few labor force surveys however cover the rural sector (exceptions are Kenya, although the survey is infrequent, and Thailand for occasional years). In sub-Saharan Africa to the authors' knowledge there are no regular labor force surveys, and Kenya is the only country with comparable household surveys for a year in the 1970's and a year in the '80's. For the two other sub-Saharan African studies surveyed here, the studies rely on cross section data for the 1980's, from the World Bank Living Standards Surveys. These living standards survey data do have the advantage of covering rural areas, and

also with some ingenuity (e.g. using information on length of tenure in current job, or length of residence in current location) can be used to shed light on some changes which have occurred over time in the labor market.

In addition to labor force surveys, many countries also have other data from Employment and Earnings surveys, collected usually at establishment level. These series tend to cover mainly the formal sector and not a representative sample of households, and can sometimes be misleading, especially during a period where there have been substantial sectoral shifts and declines in formal sector employment (see for example Lavy and Newman's 1989 work for Cote d'Ivoire). The Bolivian case study similarly points out discrepancies between both the real wage and the unemployment series from household surveys as compared to establishment surveys.

The 12 country studies pull together a wealth of information. This is particularly useful given that there is so little centralized international reporting of labor data. The ILO's regional subdivisions (PREALC, JASPA, and ARTEP) do collate and report information within the respective regions (Latin America, Africa and Asia). However the ILO yearbook for example (the basis for Johnson's 1986 work) is spotty in terms of country coverage and seems to rely on establishment survey results rather than the (arguably) more reliable household survey data. The country studies here contain not only whatever aggregate data are available, but in many cases also contain original econometric analyses (both micro and macro) of the data.

Although for some countries the workings of the labor market have been well studied, there are relatively few previous comparative studies of the effects of the crisis of the late 1970's and 1980's. Fallon and Riveros (1988), Johnson (1986), and ILO (1987) compare a range of countries, Ghai (1987) and

JASPA (1988) examine African countries, and there is work on Latin America, e.g. by Rios (1989). Garcia and Tokman (1984), and by PREALC. The public sector labor force has also been examined, for example Lindauer, Meesook and Suebsaeng (1988). The present set of studies tries to cover a broad range of countries, including some which had not been much studied previously. Although structural adjustment is by no means complete in these countries, there are by now enough years of data after the onset of crisis and adjustment that it may be timely to assess experience so far. As such the country studies may provide a valuable basis for generalization.

## II. Varieties of Adjustment Experience

Before drawing conclusions on the role of labor markets in adjustment on the basis of our case studies, it is useful to consider the nature of the adjustment that has taken place in these countries. Although it is hard to quantify the type or success of adjustment, we would venture to suggest that our 12 countries fall into four groups of three. One group consists of the three Asian countries in the sample, which have by and large had short and successful adjustments (based on previously relatively outward oriented economies). A second group consists of 3 countries which had previously strongly inward oriented economies which undertook severe and painful adjustment (Ghana, Chile, and Bolivia). The remaining countries all undertook less severe adjustments than the second group, but with less immediate success than the Asian group. These 6 countries form somewhat of a continuum, but three of them (Brazil, Costa Rica and Kenya) had moderate success in adjusting without requiring major policy reversals, and the last three (Argentina, Cote d'Ivoire and Egypt) had somewhat less success (in the case of Egypt as an oil exporter, efforts to adjust began only very late in the time period under study).

Tables 1 and 2 provide some summary information on two key economic variables, namely growth rates of GDP (the most frequently used indicator of economic performance: see table 1), and real effective exchange rate (one possible indicator of relative prices key to the adjustment process: see table 2). As table 1 shows, the Asian countries have had occasional less successful years, but in general exhibit growth rates of 5% per annum or greater, and no years of negative growth. Of the "severe adjustment" countries, Chile and Ghana exhibit economic problems dating back to the 1970's, with large negative growth of GDP in some years, but since 1983 each country has grown at close to or more than 5% in three of the following years. Bolivia (the other country in the group) encountered economic problems later (bolstered by hydrocarbon exports in the 1970's), and experienced the longest span without positive growth of all the sample countries (between 1978 and 1986 there was only one year of positive growth). Economic recovery there remains weak. Costa Rica, Brazil and Kenya (characterized here as "moderate adjustment" countries) appear to resume reasonable growth rates of GDP after the worst years (around 1980-82), although their year-to-year growth rates following adjustment are more variable than the Asian countries. The remaining three cases (Argentina, Cote d'Ivoire and Egypt, characterized here as "less successful adjustment" countries) exhibit rather heterogeneous behavior. Argentina has continual stop-and-go cycles dating back at least to 1974. Cote d'Ivoire encountered problems in the 1980's after successful growth in the 1970's, but its ability to adjust has been limited by membership of the West African monetary union. Finally, Egypt as an oil exporter only began to experience a growth slowdown after 1985.

As the time pattern of growth rates in table 1 show, the timing of adjustment was somewhat different in the various countries. Chart 1 shows the

**Table 1: Growth Rates of GDP (constant prices)**

Country	<u>Year</u>																
	70-1	71-2	72-3	73-4	74-5	75-6	76-7	77-8	78-9	79-80	80-1	81-2	82-3	83-4	84-5	85-6	86-7
Argentina	3.4	1.9	3.2	6.3	-0.7	-0.2	6.4	-3.2	7.0	1.5	-6.7	-4.9	3.0	2.6	-4.5	5.5	2.0
Bolivia	4.9	5.8	6.7	5.1	6.6	6.1	4.2	3.4	0.0	-0.6	0.9	-4.9	-6.5	-0.3	-0.2	-2.9	2.2
Brazil	12.3	10.9	13.5	9.7	9.9	9.7	2.9	4.9	6.8	9.3	-4.4	0.6	-3.5	5.1	8.3	7.6	3.6
Chile	9.0	-1.2	-5.6	0.1	-12.9	3.5	9.9	8.3	7.8	5.5	-14.1	-0.1	6.3	2.4	5.7	5.7	-
Costa Rica	6.8	8.2	7.7	5.5	2.1	5.5	8.9	6.3	4.9	0.8	-2.3	-7.3	2.9	8.0	0.7	5.5	5.4
Cote d'Ivoire	-	-	-	-	-	12.0	4.7	9.9	5.2	6.3	1.4	3.0	0.0	-8.9	-	-	-
Egypt	-	-	0.8	2.7	9.1	15.3	13.5	5.9	6.2	10.3	3.8	10.1	7.6	6.2	6.7	2.7	2.5
Ghana	5.6	-2.5	15.3	3.4	-12.9	3.5	2.3	8.5	-3.2	0.0	-1.8	-7.2	0.2	2.6	5.1	5.2	4.8
Kenya	6.9	9.5	6.8	1.5	3.4	7.0	9.4	9.0	3.8	5.6	3.7	0.6	2.7	2.0	3.8	5.2	5.8
Korea	9.2	5.9	5.4	14.4	7.9	6.5	13.2	10.9	9.7	7.4	9.8	6.7	7.3	11.8	9.4	6.9	12.4
Malaysia	7.1	9.4	11.7	8.3	0.8	11.6	7.8	6.7	9.3	7.4	6.9	5.9	6.3	7.8	9.9	1.2	5.2
Thailand	-	5.0	4.1	9.8	4.8	9.4	9.9	10.4	5.3	4.8	6.3	4.1	7.3	7.1	3.5	5.0	7.1

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**Sources**

Calculated from IMF International Financial Statistics, various years (except Bolivia data from country study).

**Table 2: Real Effective Exchange Rate (1980 = 100)**

Country	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Argentina	NA	NA	54.5	76.7	100.0	91.1	50.6	42.7	49.7	44.0	44.1
Bolivia	NA	NA	87.3	91.6	100.0	125.9	136.6	125.4	162.6	279.7	82.2
Brazil	NA	NA	122.8	112.5	100.0	121.5	129.4	104.2	104.2	100.1	94.4
Chile	93.7	102.1	85.2	86.1	100.0	118.0	106.7	86.8	85.3	68.8	58.2
Costa Rica	91.4	90.0	86.6	90.9	100.0	63.5	72.5	83.4	81.9	80.9	72.7
Cote d'Ivoire	NA	NA	89.1	98.0	100.0	85.7	78.2	75.2	72.0	72.2	84.5
Egypt	NA	NA	114.1	92.6	100.0	108.0	118.3	133.7	156.0	164.0	156.4
Ghana	NA	NA	96.8	76.5	100.0	222.4	278.1	186.9	72.2	52.5	30.2
Kenya	94.2	97.3	104.2	101.0	100.0	96.7	100.3	95.0	101.7	100.3	87.0
Korea, Rep. of	NA	NA	97.6	107.4	100.0	104.4	106.9	102.7	101.3	95.5	80.6
Malaysia	106.5	105.9	101.4	105.8	100.0	100.4	106.7	111.8	116.1	110.3	92.6
Thailand	NA	NA	91.2	92.4	100.0	102.8	105.8	108.6	107.2	95.3	85.0

Source: Calculation from IMF

Note: Increase implies appreciation



**Chart 1: Timing of Adjustment Efforts**

	1970	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	
Argentina						deregulation of economy under military							pre-election ease-up		series of failed SA's					
Bolivia		reasonable growth					lending ends		failed SA								stabilization SA		weak growth	
Brazil				SA under military								stabilization		"stabilization crisis"						
Chile				deregulation/ SA by military		stabilization		policies reversed					financial crisis		stabilization and export-led recovery					
Costa Rica									crisis onset: "spend way out" of crisis				stabilization		SA	major SA				
Cote d'Ivoire						coffee boom ends			problems begin			stabilization lending dries up			further SA efforts hampered by exchange rate					
Egypt		good growth (oil windfall, aid, remittances)										unsuccessful SA								
Ghana		long run problems											drought		stabilization SA		SA takes hold			
Kenya					structural adjustment began end of coffee boom								devaluation trade policy shift		drought					
Korea	fast growth light industry			focus on "heavy" industry							brief recession and adjustment		resumed fast growth							
Malaysia						commodity boom						"spend way out" of crisis				short severe recession			recovery	
Thailand												recession, devaluations, change in trade regime				resumed fast growth				

**Source:** Country studies, SA denotes structural adjustment

sequence of events described in the country studies. 1978 and 1982 were obviously watershed years (corresponding to the second oil price shock and start of the rise in real interest rates in one case, and to the onset of the debt crisis as signalled by inability to pay in Brazil and Mexico in the other). Some of the variation depends on price collapses in different commodity markets (coffee, cocoa and tin affected different countries in the sample), as well as good or bad harvests and weather, particularly for the African countries. At least three countries had begun adjustment in the mid 1970's (Kenya, Chile, and Brazil), and Argentina had also made some efforts in this direction. (Of course, countries such as Korea and Brazil had made structural adjustments earlier still, changing their trade regimes). After 1982 all the countries in the sample undertook some form of stabilization and/or structural adjustment.

It is somewhat difficult to quantify adjustment policy efforts or success. The real effective exchange rate (REER) may provide some useful information, in so far as structural adjustment attempts to change relative prices and the exchange rate is a key price. There are however some problems in interpreting these data. Firstly, some countries may experience policy outcomes which differ from their intentions (for example Cote d'Ivoire recently tried to mimic a devaluation, but due to changes in other currencies their exchange rate in fact appreciated). Secondly, there is no benchmark as to what the equilibrium real exchange rate should be. Some countries therefore appear to have succeeded in deep currency depreciations, but from previously highly distorted rates, whereas others appear to have less success, but because the previous rate was less distorted.

Table 2 provides some information on REER's. Of the 3 countries with least success in adjustment, 2 also failed to achieve real currency depreciations after

1982 (Egypt's currency in fact appreciated quite sharply), and the third country (Argentina) did not sustain depreciations. Most of the other countries for which there are data achieved some depreciation of their currency: Kenya after the 1981 devaluation and reforms (although the policy may have begun to slip in 1986), Bolivia after the 1985 policy change, Chile after the 1984 stabilization, Costa Rica after the major structural adjustment efforts in 1984, Malaysia after the onset of the 1984 recession, and Ghana after the economic recovery program began in 1983. With this background on the nature of the adjustment experience in our 12 countries, we turn now to labor markets and their role in the adjustment process.

### III. The Role of Labor Markets during Adjustment

#### III.1 Unemployment and Real Wages

Tables 3 and 4 summarize country experience as regards unemployment and real wage trends for the 12 country studies. Unemployment series are available for 9 of the countries studied (excluding those in sub-Saharan Africa). Most of the countries do show cyclical or trend increases in unemployment related to periods of recession and stabilization (see chart 1 also). Chile exhibits the most dramatic unemployment performance, with unemployment levels of over 10% in all the years from 1976 (when the series begins) until 1987, reaching a peak of 26% in 1982. It is difficult to understand how the rate could remain so high for so long, in the absence of unemployment benefits.

Several of the studies discuss the composition of the unemployed, and generally confirm the "luxury unemployment" hypothesis, whereby those openly unemployed are more frequently secondary household workers (i.e. not household heads) and are often the more educated. Egypt represents an extreme case where a survey of two cities found that 90% of the unemployed were new entrants to the

**Table 3: Unemployment Rates**

Country	<u>Year</u>																			
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Argentina	-	-	-	-	4.2	3.4	4.8	3.3	3.3	2.5	2.5	4.8	5.3	4.7	4.6	6.1	5.2	5.6	6.1	-
Bolivia	-	-	-	-	-	-	-	-	-	-	7.5	6.2	7.5	8.2	6.6	5.7	4.2	5.9	11.5	10.7
Brazil	-	-	-	-	-	-	-	-	6.8	6.4	6.3	7.9	6.3	6.7	7.1	5.3	3.6	3.8	-	-
Chile	-	-	-	-	-	-	17.4	16.9	17.9	17.0	15.0	25.0	26.2	21.4	19.0	13.6	10.9	7.2	-	-
Costa Rica	-	-	-	-	-	-	6.2	4.6	4.5	4.9	5.9	8.8	9.4	9.0	-	6.9	5.9	5.6	5.5	-
Cote d'Ivoire	-	-	-	-	-	-	-	-	-	-	2.5	-	-	-	-	2.8	2.5	-	-	-
Egypt	2.4	1.8	1.5	4.7	2.3	2.5	-	3.1	3.6	4.6	5.2	5.4	5.7	6.6	6.0	-	-	-	6.8	-
Ghana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kenya	-	-	-	-	-	-	-	6.1	-	-	-	-	-	-	-	-	6.9	-	-	-
Korea	4.5	4.5	4.5	4.0	4.1	4.1	3.9	3.8	3.2	3.8	5.2	4.5	4.3	4.1	3.8	4.0	3.8	3.1	2.5	-
Malaysia	7.6	-	-	-	6.7	-	-	-	6.3	5.7	5.7	5.0	4.7	5.5	6.3	7.6	8.5	8.2	-	-
Thailand	-	-	-	-	-	0.4	0.8	0.8	0.7	0.9	0.9	0.9	3.6	1.9	2.3	3.7	3.5	5.8	-	-

**Sources:**

Data are from country studies for Kenya, Bolivia, Chile (INE data), Costa Rica, and Argentina, and are from household or labour force survey data as far as possible. Data for Cote d'Ivoire are from the 1980 Census and from Fields (1990). Data for Egypt from CAPMAS (Population Census), for May Chigh agricultural demand survey. Data for Brazil are from Riveros (1989). Data for Malaysia for 1970's are from Wong (1985), and for 1980's from World Bank Economic Reports, with the exception of 1980 which is from 5th Malaysia Plan 1986-90. Data for Korea are for manufacturing only, and are from Principal Economic Indicators, Bank of Korea. Data for Thailand are from Statistical Yearbook Thailand 1976/80, 81/84, 85/86, 87/88 and 1989.

**Table 4: Real Wages Indices (1980=100)**

Country	Year																		
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Argentina	108	112	105	115	129	124	80	74	77	86	100	91	80	97	106	87	82	72	-
Bolivia	100	114	113	118	94	86	98	107	108	110	100	80	56***	42	36	55	34	42	-
Brazil	79	-	-	-	-	84	85	89	94	95	100	109	122	113	105	113	122	106	-
Chile	110	-	-	-	-	63	72	82	91	100	100	114	133	96	89	76	73	71	-
Costa Rica <sup>f</sup>	-	-	-	-	-	-	80	96	97	105	100	85	63	77	-	92	95	-	-
Costa Rica <sup>g</sup>	-	-	-	-	-	-	-	-	-	-	100	84	65	77	-	93	97	-	-
*Cote d'Ivoire	-	-	-	-	-	-	-	-	-	-	100	-	-	-	-	115	-	-	-
*Egypt <sup>c</sup>	-	-	-	89	92	73	79	92	89	105	100	103	104	108	118	120	103	91	-
*Egypt <sup>d</sup>	-	-	-	98	96	86	88	109	100	103	100	105	108	104	108	101	92	84	-
*Egypt <sup>e</sup>	-	-	-	125	109	104	105	104	103	103	100	108	109	98	96	89	75	69	-
*Ghana	-	-	-	-	-	-	-	-	113	93	100	59	53	41	60	87	141	-	-
*Kenya <sup>a</sup>	-	-	-	-	88	86	89	87	90	91	100	90	81	79	80	78	79	82	84
*Kenya <sup>b</sup>	-	-	-	-	106	103	114	109	110	106	100	96	85	84	81	78	83	80	81
*Korea	44	45	46	53	57	58	68	82	96	105	100	99	106	115	122	130	139	150	168
*Malaysia	83	83	80	71	76	80	85	87	89	95	100	99	106	115	122	130	139	150	168
Thailand																			

**Notes**

- |                      |                                      |
|----------------------|--------------------------------------|
| a private sector     | e government                         |
| b public sector      | f paid workers (employees)           |
| c private sector     | g all workers                        |
| d public enterprises | *** denotes possible break in series |

**Sources:**

Data for Kenya, Ghana, Bolivia, Egypt, Chile, Costa Rica and Argentina are from country studies. Indices were recalculated to base of 1980 where necessary, by the overview authors. Data for Brazil are from Riveros (1989). Data for Malaysia for 1968-74 are from Department of Statistics, Industrial Surveys, and for 1975-87 from Department of Statistics, Monthly Industrial Statistics, and refer only to manufacturing. Data for Korea are from Bank of Korea *Principal economic indicators*, and are for manufacturing only. Data for Cote d'Ivoire are from Lavy and Newman (1989) and are for the formal sector only.

\* denotes data from employment and earnings survey (otherwise household survey).

labor force, and that 80% had intermediate level of education or above. Educated female unemployment is a particular problem in Egypt, since there are few opportunities outside the government sector. In Thailand, unemployment is highest amongst those with vocational education, and education of university graduates rose in the 1980's, when government employment growth slowed dramatically. Likewise in Malaysia, the educated unemployed phenomenon has changed over time, from unemployed high school graduates to unemployed college graduates, and as in Egypt, there is more cause for female educated unemployment. The Costa Rica and Bolivia studies both document another feature of the composition of the unemployed, namely an increase in the share of heads of households and of job leavers amongst the unemployed in crisis years.

In most of the countries, weak labor demand translated into other forms than unemployment. Underemployment increased, although this is hard to measure (the Costa Rica, Bolivia and Argentina studies provide data and show that it generally moved with the unemployment rate). Participation rates also changed, and informalization increased. Only Chile and Bolivia used formal emergency employment programs, but many of the countries bolstered public employment at least as a temporary measure during the crisis, until fiscal stabilization measures dictated public sector employment cuts. Discussion of public employment is delayed until section III.4 below.

Changes in participation rates can affect the measurement of unemployment. Theory is however ambiguous as to whether the added or the discouraged worker effect will predominate. Three of the studies discuss the issue, and suggest that the added worker effect predominated in Costa Rica during the crisis and discouraged worker effect in Bolivia. In Argentina the authors argue that the discouraged worker effect prevailed in the 1970's, and the added worker effect

in the 1980's, although they do not provide an explanation for the change. One complication in interpreting the data is that most countries have also observed a trend increase in female labor force participation rates (the Malaysia, Bolivia, Costa Rica, Korea and Kenya studies all mention this). Thus it is not always easy to separate trends in female labor force participation over time, from temporary fluctuations in response to economic crisis.

A final form of quantity adjustment involved a shift from formal to informal sector employment. As employees lost jobs, one route to take was to become self-employed in the absence of unemployment compensation, and likewise output and thus employment often shifted from large formal sector firms to smaller informal sector ones. This is again a difficult topic on which to obtain data, and studies often define the informal sector differently. The phenomenon has been widely studied for Latin America by Tokman and others. The Bolivia case study argues informalization was an important method of labor market adjustment. In Argentina although the authors state that the informal sector was less important than elsewhere in Latin America, non-wage employment grew faster than wage employment in non-tradeables in all three periods considered (1960's, 1970's and 1980's), and in both manufacturing and agriculture non-wage employment grew faster in 2 of the 3 periods. In Brazil the main shift was into the unprotected employee sector (those without signed contracts), rather than into self employment.

Informalization has been less well documented in Africa. The Cote d'Ivoire study however does mention a shift between formal and informal establishments in manufacturing, and a similar employment shift is argued to have occurred in Kenya (where the informal sector employment grew 11% in 1988 when wage employment growth slowed). There is also similar evidence for Asia. In Malaysia the trend

rise in employees as a proportion of the labor force was reversed during the short recession. In Korea the trend towards an increased employment share in large firms in manufacturing was arrested in the early 1980's, and the proportion of females who were regular employees (as opposed to temporary or casual) likewise reversed its upward trend.

Real wage behavior, perhaps more than unemployment rates, differentiates the country groups discussed in section I. (Note that the wage data available are for the formal sector except for the Latin countries). The Asian countries show a fairly steady advance in real wages, with brief interruptions during recession (although the authors stress the importance of these real wage slowdowns in allowing productivity to stay ahead of real wage growth and ensuring declining unit costs). The "severe adjustment" countries show dramatic wage fluctuations, with wages at their lowest less than 50% of the peak, and with real wage declines far greater than the fall in GDP. Real wages in Ghana recovered by 1986, are still not back to peak levels in Chile, and are continuing to fall in Bolivia. The other countries are somewhat intermediate: in 2 of the 3 "moderate adjustment" countries (Costa Rica and Brazil) there are gains between the start and end of the time series, albeit less marked than for the Asian countries, and the third (Kenya) has a wage decline in the public sector but private wages are closer to holding their own. The difference between Kenya and the other countries in this group is likely population pressure. Finally, the "less successful adjustment" countries show a less severe wage decline than the "severe adjustment" ones, perhaps explaining a little of the political opposition to such severe adjustments. It is however necessary to be a little cautious in interpreting the real wage data, particularly in cases where it is not from household survey data, because of the employment composition issue. Earnings



functions (discussed later) can be helpful in this regard.

How can we interpret the evidence discussed above, and what can we infer about labor market workings? As discussed in section I.1, there are three possible explanations as to why unemployment may persist during stabilization. The first of these is that the labor market is not working well because of real wage rigidity. The evidence of our case studies certainly does not favor the view that real wages were rigid and therefore led to unemployment. Even for Chile, where unemployment was highest and persisted the longest, real wages fell dramatically. Even in economies like Brazil and Argentina, where wage indexation is prevalent, real wages have been flexible. Devereux argues that the failure of disinflation plans in these countries is due more to inappropriate and non-credible fiscal policies. The effect of wage indexation is only to magnify and lengthen the inflation response. If the "inflexible" real wage explanation is inappropriate, because of the observed severe falls in real wages, then this leaves the other two explanations--aggregate demand feedbacks from declining real wages, and output market imperfections.

The wage level enters the system as a determinant of aggregate demand through its effect on the distribution of income. The mechanism depends crucially on the assumption (generally valid empirically) that the propensity to save is markedly lower for wage earners than for recipients of profits. If the share of wage in total income falls, for example, savings in the economy increase, and aggregate demand will fall unless there is an offsetting increase in investment. These ideas are implicit in the works of Keynes and Kalecki and have recently been discussed in the context of stabilization and adjustment problems of developing countries by Taylor (1988) among others.

Taylor distinguishes between what he calls "exhilarationist" and

"stagnationist" economic scenarios. In the former, output is constrained by bottlenecks related to a short supply of capital. Real wage cuts leading to a higher profit share will increase the supply of savings, and may translate into higher investment. In the "stagnationist" economic scenario, however, the binding constraint on output growth is the low level of consumer demand relative to capacity. A fall in the share of wages in these conditions leads to stagnation. It is possible for an economy to start from an exhilarationist position, but then slip into a stagnationist position as wage share falls steeply.

The existence of a dual labor market with a distinctly lower wage level in one sector compared to the other, reinforces the conclusions drawn from the model with a homogeneous labor market. Consider the case of a recession with a fall in labor demand in the formal sector. Although the typical scenario as analyzed in the country studies is that there is a fall in wages, sometimes fairly drastic, this is not always the case. In Malaysia average earnings of workers in the formal sector actually increased because workers of short periods of service and workers at the lower spectrum of wages and skills were laid off first. In all cases, however, the workers displaced from the formal sector as well as those entering the labor force entered the informal sector in growing numbers. The share of total employment at the lower wage levels increased significantly. For the economy as a whole, therefore, average wages fell faster and to a greater extent than in the formal sector.

Does the stagnationist hypothesis still hold if we allow for the possibility of exports? In the traditional model of the small open economy (such as the one which is reviewed by Addison and Demery) it will not hold unless wages are rigid downward in both the tradeable and the non-tradeable sectors. As

demand contracts, and there is wage-rigidity in the non-tradeable sector, there will be unemployment in this sector. But if wages are flexible in the tradeable sector, costs will fall in tradeables. There is, however, unlimited demand for tradeables at the going product price, under the assumption of a small open economy model, so that the unemployed labor will be absorbed in the more profitable tradeable sector. Total demand will be restored to its initial level with a larger share of GDP accounted for by tradeables. But even if there are wage rigidities in both sectors, the profitability of the tradeable sector needed to attract resources with it, can still be achieved by a real devaluation which increases the ratio of prices of tradeables to that of non-tradeables ( $P_T/P_N$ ). This is why in the textbooks devaluation is sometimes called an alternative to wage flexibility.

The Asian and Latin American country studies provide sharp contrasts as to the role of wages and devaluation in macro demand contraction. Korea, for example, depended on continuous devaluation of its currency over a long period of time as well as maxi-devaluations during periods of severe external shock. As an export-oriented economy it was necessary for Korea to increase its competitiveness by reducing its unit labor costs in dollar terms. (see table III.1 of the Korea study). Due to the rapid growth of labor productivity, the response to external shocks was to hold constant real wages rather than requiring a wage decline. The combination of a maxi-devaluation and temporarily preventing wages from rising with productivity, led to a very quick recovery of exports. At the same time, since the slowdown in real wage growth was so short, there was no significant deflationary impact in the domestic market.

Another factor important in recovery was government policies to counter the increase in non-wage costs following devaluation. Because of its important

role in the finance of large-scale industry, the government was able to offset to some extent the increase in the cost of borrowed foreign capital caused by devaluation by offering cheap subsidized credit to business.

The last point touches on a general point about the role of wage flexibility in adjustment. In Southeast Asian economies the share of wages in value added is typically one-third or a little more. Thus, changes in capital costs are often as important in determining competitiveness as changes in wage levels. The course of events leading up to the recession in Malaysia in the middle 80s, and the subsequent adjustments triggering recovery, illustrate the point vividly. Unlike Korea, Malaysia is an oil exporter. In the early 80s, government spending in Malaysia increased enormously, partly to bolster an attempt to prolong the boom associated with the oil boom. The resultant pressure on external competitiveness came from three sources: (i) there was an increase in wages which continued even after employment growth had slowed down; (ii) there was a sharp increase in interest rates as demand for private capital funds competed with the public demand; and (iii) there was an appreciation of the real exchange rate, because the capital account was uncontrolled, and there was a massive inflow of capital to finance the budget deficit. The loss of competitiveness created an external imbalance which could only be corrected through a sharp recession. Malaysia was fortunate, however, that all the relevant factors showed remarkable flexibility. As wages fell, the interest rate fell to a level which was nearly a third of its peak level, and there was a sharp depreciation of the currency. It is clear that it was the "collapse" of all the factor markets which was instrumental in making the recession short-lived. Of course, the improvement in the world economy was a factor triggering the recovery, but it was the gain in competitiveness fed by the downward flexibility

wages, interest rates and exchange rates which allowed Malaysia to seize the opportunity in the second half of the 80s.

The Latin studies illustrate almost the opposite case in terms of the effects of real wages on demand, the clearest example being that of Bolivia. The fall in wages in the 1980s was twice that of the magnitude of fall in real GDP, and if we take into account the increased share of the low wage informal sector, the fall in the share of labor income must have been drastic. Even by the end of the decade there was little sign of any recovery of wages or employment. The fall in the share of wages must have depressed the domestic market considerably. At the same time, in spite of the real exchange rate falling to less than a third of the level of 1985, there was no sign of export-led recovery. Evidently the market structure for favoring large shifts to export did not exist in Bolivia.

By contrast, another Latin American country, Costa Rica, shows the possibilities of the existence of a basic structure of links to the world market, and also illustrates the advantages of an institutional mechanism which limits the direction of wage deflation. Real wages fell between 1980-2 as indexation tied to past inflation failed to protect workers as inflation accelerated. In mid-1982, when stabilization was instituted, real wages turned upwards again as inflation decelerated. By 1986, real wages had regained their value of 1980. The short period within which the real wage decline was confined might have helped to stabilize the domestic aggregate demand. At the same time the decline in the product price of exportables helped by the fall in real wage and the devaluation of 1980 was instrumental in the improvement of the export situation. Established institutions thus helped Costa Rica in two ways to stage a recovery in the post-1982 period. Market links were important in ensuring that the fall

in real exchange rates and wage costs had the desirable impact on exports. More surprisingly, indexation was significant in the initial fall in real wages, and in limiting the period of wage stagnation.

Another instance of sharp deflation caused by a fall in the share of wages in GDP comes from the case of Chile during the drastic policies of stabilization pushed through by the military junta after the fall of the Allende regime. This case illustrates the importance of product markets in the process of adjustment. Although extreme, it is worthy of discussion because, as Ramos points out, "other countries may simply be experiencing in slow motion (stagflation) what Chile experienced all at once (hyperstagflation)."

In October 1973, the junta freed prices which had been controlled under the previous socialist regimes, but unlike Germany after World War II, Chile did not have a monetary reform to put a cap on the freed inflationary prices. Prices immediately rose to levels 30 times those of 1979, and clearly overshooting by a good deal what had been expected to be the equilibrium level.

On the labor front, the junta's policy was to separate wage readjustments from the freezing of prices in order to prevent a wage-price spiral. Adjustment of wages was postponed by several months. When it did take place, it was consistent with a much lower rate of inflation. Thus, there was a sharp drop in real wages which in 1975 was nearly half its pre-Allende level. The real wage decline astonishingly was accompanied not only by high rates of inflation, but also by a rapidly increasing rate of unemployment which climbed from 3 percent in the first half of 1973 to 10 percent in 1974 and 19 percent in the first half of 1976. The rise in unemployment was, as is to be expected, associated with a sharp decline in industrial output at least until the end of 1975. (The index of industrial output declined by half between end-1973 and end-1975).

What explains the co-existence of high inflation rate, falling real wage, and declining output? The crux of the problem would seem to be the inflationary expectations and non-competitive behavior in the product market. There was clearly no demand pressure because consumer demand fell very early with the fall in real wage, and demand contraction intensified as real wages fell and unemployment increased at a high rate. Nor was there any cost pressure; for "whereas the prices of imported inputs in the last quarter of 1973 rose to 30 times and wages rose 14 times their 1969 levels, product prices rose to 40 times their 1969 levels upon being freed in October 1973." Prices seem to have increased in anticipation of much higher demand and cost pressures than in fact existed. "Producers seem to have set prices to balance supply and demand not as of the moment, but in three months' time so to speak." The anticipated increase could be on the side of money demand, or in terms of unforeseen wage adjustments, devaluation and rise in input costs.

The continuation of inflationary price increase in the face of serious disequilibrium in the product market with producers unable to sell their products is a difficult proposition to explain in terms of textbook economics, and indeed came as a surprise to policy makers. A major factor in the continuation of the process was that price setters were not penalized soon enough for their erroneous expectations because of the massive increase in the share of profits which the fall in real wage entailed.

The inflationary expectation was finally broken when there was a revaluation of the currency for balance of payments reasons and tariff reductions undertaken for reasons connected with the long-run development of the economy. The downward jolt these measures gave to the prices of both inputs and final goods seems to have fueled the recovery after 1976. Prices finally began growing

less than the money supply, with output rising, unemployment falling, and real wage rising much more than total output.

### III.2 Problems of Distributive Conflicts

The fact that there is enough evidence to suggest that wages have been flexible in many countries during the periods of adjustment does not imply that issues of distributive conflicts have not been major issues in several countries. The country studies show that in Latin America, in particular, the conflict between maintaining or increasing labor's share of output and achieving external balance has been an important factor in the limited success of stabilization policies. Countries, of course, differ in the importance of distributive conflict in their economic history. Apart from differences in labor market institutions, discussed below in Section III.3, the structure of the economy seems to be critical in some cases.

One factor which seems to be important is whether food is an important tradeable or not. The case of Argentina is a good example showing how the different objectives could be in conflict when basic foods in the workers' consumption budget (cereals, meats, etc.) are tradeable goods, and there is no significant government interference with the domestic prices of these commodities. In this case there is a close relationship between the exchange rate and the product wage in the non-tradeable sector of the economy. Currency devaluations lead to increases in the domestic price of food, which in turn leads to upward pressure on money wages. Such an increase will not affect product wages in the tradeable sector, since product prices of traded goods would also have increased in the domestic market. But ceteris paribus, the product wage in the nontradeable sector will increase. There is then a conflict of interests between the producers of non-tradeables and the workers employed in this sector.



This exchange rate-wage trade off taken together with the fact that politically the non-tradeable sector is more powerful because of its urban location, has given rise to the wage cycle documented in the country study. When external markets of Argentina's food exports are strong, the tendency is for the currency to slide into overvaluation which helps increase real wages without hurting profitability in the urban non-tradeable sector. But, when the external terms of trade weaken, devaluation is imperative to ease the problem of external imbalance, and various forces are set in motion which depress real wages to protect profitability. In Argentina, as in much of Latin America, bursts of inflation have often been the mechanism for reducing real wages.

It should be noted that not all countries have a large proportion of their wage-goods or food as tradeables as Argentina does. In particular, in many Asian economies (including the two in our sample, Korea and Malaysia) rice, although an internationally traded good, is in fact a non-tradeable because of government price policies. In these countries, the government plays a dual role in the price market. On the one hand, it buys rice from the farmers at a high procurement price as an aid to support the level of earnings in this sector. On the other hand, it distributes the rice through its retail outlet at a subsidized price for the benefit of (mainly) urban consumers. The financial deficit caused by the difference between the buying and selling price of rice is covered by the overall budget of the central government. Thus, although the government imports rice to supplement the amount procured from local farmers, the domestic price of rice is insulated from the border price. This important wage good is, in effect, a non-tradeable. The problem analyzed above, stemming from an inverse relationship between the external value of the currency and the price of the wage good, does not exist for such economies.

The supply of capital may also lead to a trade-off between wages and the exchange rate. Let us assume that the growth of output is constrained by the supply of capital (savings) rather than by demand (i.e. in terms of the distinction made in section III.1 the economic scenario is an "exhilarationist" one.) The share of wages in value added has a direct effect on total savings and hence the growth rate of output. The exchange rate also affects the output growth from two angles: first, the higher the value of the currency the greater the trade deficit which--if it can be sustained--increases foreign savings (borrowing) in the economy. Secondly, a higher value of the currency reduces the cost of intermediate inputs, and effectively increases the marginal impact of savings on output growth.

An exchange-rate/wage trade-off exists in the sense that a given rate of savings (and growth rate) could be achieved with different pairs of values of the exchange rate and the wage share; the higher the latter, the higher has to be the degree of overvaluation. Government policy impacts on both the exchange rate and the wage share through its determination of the rate of growth of money supply, and hence the rate of inflation. With indexation rules determining both exchange rate and wage adjustments, because of lags in the system, a higher rate of inflation achieves both a higher rate of overvaluation and a lower share of wages. There is then an equilibrium relationship connecting the rate of inflation, the value of the exchange rate, the wage share, and the real growth rate of the economy.

The case of Brazil illustrates the key problems and constraints in this system. During the period 1967-83, Brazil followed a policy of stepping up the growth rate by expanding the supply of money. This led to a rise in the rate of inflation, and fall in the share of wages. The associated increase in real

exchange rate and the fall in the share of wages both increased real output growth by increasing foreign and domestic savings and reducing the domestic cost of imported inputs. The mechanism for bringing about this change worked as long as changes in the values of the relevant variables were sustainable. The feasibility of a fall in the share of wages depended on the existence of an authoritarian political system. Similarly, the appreciation of the real exchange rate meant an increase in trade deficit which could only be financed by foreign borrowing. The persistent increase in foreign debt was one of the costs of this strategy of boosting the real rate of growth.

The first oil shock of the mid 70s meant, in effect, a change in the parameter of the Brazilian production function, so that at the old values of the variables, output growth was depressed. At the same time there was a sharp increase in the import bill. The government's response to this situation was to undertake a program of import substitution in capital and intermediate goods, financed by stepped up foreign borrowing. The second oil shock and the increase in interest rates finally made this policy unsustainable. The debt burden had reached a proportion when further foreign borrowing was no longer an option to sustain a high value of the real exchange rate. A new element in the situation was the change in the political system. It was no longer easy to reduce the share of wages with a higher rate of inflation. The country study discusses the distributional conflicts in more detail.

Thus there were two barriers to achieving a higher real savings rate to counteract the effect of the deterioration of the external terms of trade. The government could not continue to overvalue the exchange rate, nor depress wages. Nor could these be changed with a higher rate of inflation in such a way that a new equilibrium set of values of the relevant variables could be achieved.

This was at the heart of the story of failure of stabilization efforts in the 80s. One way out would have been if total factor productivity growth could have been increased to a sufficient degree. But, evidently the Brazilian economy was not able to achieved this goal. On the contrary, there is evidence in the country study that labor productivity actually fell, as labor hoarding in the formal tradeable sector increased significantly in response to the deteriorating employment situation. The contrast with the Korean experience on this point is striking. The country side documents the enormous importance of total factor productivity growth in the successful adjustment of the Korean economy to the oil price shocks. Because of the increase in total factor productivity, the required decline in the share of wages could be achieved with the negligible decrease in the absolute level of real wages, and the increase in the cost of imported inputs due to devaluation could be largely offset.

The discussion so far in Section III has concentrated on economy-wide effects of wage behavior. In the next subsection we turn to the effects of variations in sectoral wage differences in the process of adjustment.

### III.3 Sectoral Employment Shifts and Relative Wages

Sectoral employment shifts are a key part of structural adjustment, and Edwards and Edwards discuss these in a basic 2-sector dependent-economy model, in the presence of labor market distortions. They examine four different scenarios (plus the basic competitive case). In the basic model, standard results apply and labor would tend to benefit from trade liberalization. Even if economy wide wage rigidity is allowed for, the authors argue that trade liberalization reform will result in unemployment in the short run, where capital is immobile. However in the longer run, if importables are the less labor

intensive sector, starting from an initial condition of unemployment, a trade liberalization reform will increase total employment in the economy.

The authors then take the case where only the importable sector is covered by a minimum wage. In the short run there will be lower employment in importables and higher employment in exportables, but employment in non-tradeables and total employment is ambiguous. They conclude: "in the presence of labor market distortions, trade liberalization policies usually considered to be beneficial may generate nontrivial (short run) unemployment problems." This conclusion holds also in the third variant considered, that of capital account liberalization.

The fourth and final case considered is where wage distortions in importables are related to degree of tariff protection. In the short run, trade liberalization increases unemployment and depresses wages in the other sectors in the economy. Although some of this would disappear in the long run, the scenario highlights possible political economy conflicts. Labor, "the factor of production that is supposed to gain from freer trade, is negatively affected in the short run, and the long run gains are hard to perceive when compared to the initially distorted situation of the economy."

The country studies here provide information on various sectoral differentials: economic sectors (agriculture/manufacturing/construction etc.), formal/informal, tradeable/non-tradeable, and occasionally even finer categories such as importable/exportable/non-tradeable. There is also some information on skill differentials. How formal/informal or skilled/unskilled categorizations correspond to the tradeable/non-tradeable distinction which is of key interest, is not always clearly specified in the country studies, and varies between countries (the Brazil study provides the most complete breakdown). One important

problem in many of the studies is that the agriculture sector is an important component of tradeables, but there are no agricultural wage data for the Latin countries, and they exist for the African countries only for one point in time.

All of the studies with the exception of Thailand, Korea, and Brazil provide information on sectoral employment shifts in response to structural adjustment. In most cases different industrial sectors are discussed, but for two of the Latin countries the tradeables/non-tradeables distinction is used instead. The Asian countries were relatively successful in increasing manufacturing employment during structural adjustment. In Latin America and Africa by contrast the picture is that there has been some of the desired shift into tradeables, but largely due to the shift back into agriculture and out of government employment. Manufacturing sector employment frequently seems to have suffered during the years of crisis and not to have recovered during adjustment. This is perhaps not a surprising result of policy changes which depreciate the exchange rate but at the same time reduce tariffs. Although the former benefits agricultural exports, the possible benefits to manufactures are offset by decreased protection.

Thus in Cote d'Ivoire there has been a shift back into agriculture (based on panel data, and examining transition behavior and the destination of new job entrants). Earnings survey data over time document the large decrease in modern manufacturing employment despite subsidies. In Ghana there has been a reversal of migration into the capital, Accra, (which was the destination of 46.5% of migrants prior to 1970), and instead in 1982-7 Accra was the source of 60% of recent migrants. In Kenya sectoral employment figures for urban areas show that the manufacturing share stagnated since 1978. In Egypt the recession led to a large drop in the manufacturing sector, especially small scale, but the author

is skeptical as to the possibility of reverse migration to rural areas being possible (the agriculture sector there in any case suffers from serious disincentives, with the exception of the more capital intensive livestock sector). In Bolivia there was a net shift into tradeables, due entirely by the shift of employment back into agriculture. Employment in manufacturing declined.

In the richer countries where urban households have a more tenuous attachment to rural areas it seems harder to envisage return migration to rural areas, but it may be possible for agriculture to attract a larger share of new job entrants. Whereas in the growth years of the 1970's both food and cash crop agriculture lost employment in Malaysia, in the 1980's recession agriculture provided a third of new jobs, and along with private services filled the gap left by slower growth in manufacturing and government employment. In Chile also during the 1980's export boom, employment in agriculture grew as fast as total employment. Employment in manufacturing and mining grew even faster, thus implying a net shift into tradeables.

The Argentina and Costa Rica studies both examine employment shifts between tradeable and non-tradeable sectors. In Argentina there has been a secular trend towards increased employment in non-tradeables and in Costa Rica a similar trend out of exportables. Since Argentina did not have a sustained adjustment program this trend continued in the 1980's, but in Costa Rica adjustment arrested (but did not reverse) the trend. However the study authors find some cause for optimism in the growth of the (small) non-traditional export sector.

It is useful to examine sectoral wage data in conjunction with sectoral employment figures. Simple theory suggests that the effect of structural adjustment policies should lead to a relative increase in wages in tradeables to encourage labor movement. However employment shifts may also cause changes

in relative wages. Structural adjustment in practice has been associated with labor shedding from government and from formal sector activities (either due to reduced tariff protection, or the removal of job security legislation). Since workers cannot remain unemployed long in developing countries due to lack of unemployment insurance, there has been a tendency for labor to move to sectors with flexible entry, frequently the informal sector or agriculture. "Crowding" of labor in these sectors may have also depressed relative wages. Thus relative wages in non-tradeable sectors with easy entry (e.g. commerce, services) may have been depressed both directly due to exchange rate changes and indirectly due to labor crowding, whilst wages in tradeable sectors with easy entry (e.g. agriculture) could go in either direction due to opposing effects. Furthermore changes in labor force composition within sectors can obscure trends. Sectors losing labor may experience increases in aggregate wages due to the loss of workers with the lowest levels of human capital and seniority. The latter effect can be dealt with by the use of earnings functions, discussed at the end of this section.

All the studies (except Thailand and Cote d'Ivoire) provide some information on the changes in relative wages, whether between economic sectors, formal/informal sector, tradeable/non-tradeable, or skill categories. Nine of the studies have information on sectoral wages over time, either by GNP sectoral classes (4 studies) or a modified version thereof (3 studies), and 2 examine the tradeable/non-tradeable distinction. In general relative wage changes did support structural adjustment objectives, although this is not necessarily true for each country and each sector.

In Ghana, relative wages rose in agriculture and mining, sectors figuring heavily in the Economic Recovery Program. In Egypt wages rose relatively in



agriculture and private manufacturing, largely because other sectors were unable to adjust employment. In Kenya the relative wage changes are not clearly interpretable. Finally, in Bolivia relative wages fell in commerce (crowding) and manufacturing (tariff cuts), and there are no data for agriculture which expanded.

We next consider the three countries where modified sectoral wage data are available. In these three countries, manufacturing wages seemed to rise in the recession and/or during structural adjustment, assisting the growth in manufacturing employment. In Chile, manufacturing wages rose relative to average wages during the structural adjustment export boom in the 80's. In Malaysia during the boom up to 1984 agricultural wages overall gained, but this was reversed during the recession. In the recession manufacturing and construction wages tended to increase (possibly due to shedding of lower paid labor with less human capital) and production wages fell less than wages of sales and service personnel. In Korea farm earnings tended to gain in the brief recessions (1973-5, 1980-1), but overall lost ground due to the large widening of differentials during the heavy industry "big push" in the late 70's.

Finally, two studies use the tradeable/non-tradeable distinction (although the sectoral classifications above could be translated into tradeable/non-tradeable also). The Argentina study found that relative wages had tended to increase in non-tradeables over the period 1940-62, but that the (failed) structural adjustment attempts since then had at least managed to arrest the trend. In Costa Rica relative wages in importables and non-tradeables fell in the 1980-2 recession but recovered faster during the ensuing adjustment period, thus maintaining their relative position overall during the period.

Government wages seem to have fallen universally during adjustment, due to

pressures on government expenditures (although some authors suggest that the trends were different in central government and in the parastatals). This is documented in Kenya, Ghana, Egypt, Bolivia and Costa Rica. In Malaysia government wages rose less rapidly than in other sectors. Thus changes in sectoral wages seem to have generally supported structural adjustment aims, and also corroborate the trends in employment.

Six of the country studies also examine trends in the formal/informal wage differential. Here wage trends are likely to reflect not only goods prices, but also the effects of crowding discussed earlier. The country studies suggest that the patterns also depend on institutions in place in individual countries. For example, the formal sector is generally more able to protect itself during anticipated inflation, provided that institutional mechanisms provide full compensation for inflation. The informal sector however is less tightly bound by wage freezes, and in periods of unanticipated inflation informal wages are more closely tied to the goods market. In countries where the informal sector thrives because of distortions in the formal economy, e.g. Ghana, structural adjustment may remove rents and therefore benefit the formal sector.

Crowding seems to have been important in the early 1980's recession in Costa Rica, Chile and Brazil, when the informal sector did relatively worse. In Korea also the formal/informal earnings gap widened during recessions, likely because of a composition effect (the formal sector shed the lower paid workers). However in the Bolivian hyperinflation, and during the Brazilian heterodox stabilization under the cruzado plan (where there was a combination of a price freeze plus strong demand), informal sector earnings improved relative to formal ones. The Malaysian evidence is somewhat mixed since male and female wages performed oppositely. Male self employed wages rose faster than employee wages over the

whole period (partly explained by the increase in education of the self employed). Female employee wages did better in the boom but then fell relative to the self employed during the recession (the Malaysian results are from earnings functions, not aggregate wages, unlike the results for the other countries). The author of the Malaysia study suggests that there were therefore pockets of female informal sector employment which did not participate in the boom affecting the rest of the economy.

Finally, a couple of studies mention skill differentials. These narrowed during inflation and the first structural adjustment period in Chile (1970-76) and never recovered. In Egypt white collar-blue collar differentials narrowed throughout the oil boom and continued to narrow through the recession (perhaps due to slower growth in the public sector).

Some further information on earnings can be obtained from analyzing earnings functions. Altogether 6 of the case studies present earnings functions, of which four have separate functions for years before and after the onset of structural adjustment (Malaysia, Costa Rica, Bolivia and Kenya). Two other African country studies present earnings functions for a single year (Cote d'Ivoire and Ghana), although the Ghana study divides the sample by length of job tenure which is an ingenious way to get some information on changes in the labor market. In five cases therefore (i.e., all but the Cote d'Ivoire) it is possible to get some additional information on changes in sectoral, male/female and formal/informal differentials, purged of the effect of changes in human capital characteristics within sectors. Such a correction is important in a period of large structural change (see for example Lavy and Newman's (1989) work for Cote d'Ivoire), or when participation rates change greatly (see for example work on the US male-female differential over the 1970's).

There are definite changes in the earnings functions. One feature is that adjustment seems to weaken the explanatory power of earnings functions (perhaps because many of the characteristics associated with the formal sector receive lower rewards). The R squareds fall in Malaysia, Bolivia and Costa Rica (there are not separate equations for Ghana, and for Kenya where the authors argue that labor markets did not adjust substantially, R squareds improve). Coefficients decreased for many formal sector characteristics; urban location and union (Ghana): education, experience, being married, being male, and being in the formal sector (Bolivia); education and experience (Costa Rica); higher education, urban location and women's education (Malaysia after the 1984 recession). In Kenya by contrast coefficients on characteristics associated with formal employment rose (age, being male, formal sector, and the Nairobi premium). In Ghana sectoral differentials moved in the direction of adjustment (the mining coefficient rose and the service sector coefficient fell), whereas in Kenya sectoral relative wages did not change markedly.

The use of earnings functions is obviously a useful direction for further work on labor markets and adjustment, and in this respect the technique of dividing the sample (as used in the Ghana study) seems a promising way of teasing out trends from a single cross section of data, which might be particularly useful for African countries.

For Ghana, earnings functions suggested a relatively well-working labor market, which complemented the findings from the little trend data available. Female and male hourly earnings were not too dissimilar (although total earnings differed), first and second jobs had similar hourly earnings (except in agriculture), and there was a premium for seasonal labor.

For Cote d'Ivoire, data were available for two consecutive years, including

some repeated data on the same individuals. Participation and employment transition equations were estimated, rather than earnings functions. The panel data showed that labor market transitions generally were towards sectors favored by adjustment (particularly agriculture) and that within manufacturing there was a shift towards the informal sector. As regards the probability of leaving employment, this was higher for women, lower for the services, higher for construction, and lower for the more educated. Likewise higher levels of education had a positive effect on the probability of entering employment (in contrast to the results for Asia and Latin America where structural adjustment often adversely affected earnings and unemployment for the educated). Unemployment could be relatively persistent: of those seeking employment in 1985, 81% were still unemployed in 1986, although 42% of the original group had stopped looking. Finally, the study had some interesting results on the effects of crop price indexes on work behavior in rural areas. Increases in these indexes had a positive effect on work supply for those who were both working and in school in the first of the two survey years, but a negative effect on work supply for those full time in education in the first year. I.e. crop price increases could increase effort, but not at the expense of interrupting human capital acquisition, an interesting finding.

#### III.4 Labor Market Institutions

Two issues papers deal with labor market institutions, Devereux's (on wage indexation, discussed in section III.1 above), and Nelson's, on political economy issues. The latter paper focusses particularly on the effect of unionism, both private and public, on labor market flexibility. It also discusses economic and political factors which affect how militant or co-operative labor movements are likely to be.

Nelson argues that there are theoretical reasons as to why unions in developing countries might be more militant than in developed ones. The relationship between union organization and militancy is inverted U-shaped: weak unions exhibit a low level of militancy, and very strong centralized unions are also less militant as they can no longer consider only sectoral gains. Developing country unions fall in the middle, with some strongly organized sectors but no strong central union body. Unions in most developing countries do not fit the "corporatist" model where wage gains are traded off for better employment security and where labor may take account of the macro impact of sectoral wage demands. Another feature of unions in developing countries is the greater role of public sector unions, due to the greater share of public sector employment in total formal employment. A feature of the public sector is the greater difficulty experienced in laying off workers, and the large severance payments offered.

Economic factors may affect labor's intransigence: there tends to be more concern for wages in the upswing, and more concern for employment protection in downswings (although unions foreseeing times getting worse, may try to grab what they can early in the downswing). Political factors also matter: authoritarian regimes tend to use coercion more than democratic regimes (with some exceptions on both sides). The stage of the electoral cycle matters, as does labor's role in the political and party process (labor may be attached to one party in a polarized system, or have access to more than one party in a more open system, or be largely excluded from the political arena). Likewise the degree of stability of the regime matters, new democracies in particular being susceptible to the revolution of rising expectations. Nelson makes the important point that successful adjustment in the long run not only requires investor confidence in

the government's long run ability to fulfil its promises, but also the confidence of the labor movement. The degree of equity in a society may be an important ingredient in sustaining such confidence.

The Latin country studies dwell at length on labor market institutions (unions, indexation, minimum wages, legislation on benefits and job security, and segmentation). For the African countries these institutions receive less coverage in the country studies, although they exist. As the Kenya study makes clear, however, it is one thing for the institutions to exist, and another for them to be effective, and their force tends to be weakened by the highly elastic labor supply to urban areas in Africa. It is also likely that the much lower proportion of urbanization and of formal sector employment makes a difference. The Asian countries have some similar institutions (2 year wage contracts in Malaysia, and the same kind of long-term contract/temporary labor division in Korea as in Brazil). However it is clear that the role of unions in Asia is very different from that in Latin America and Africa.

The five Latin country studies provide an interesting contrast in terms of the alleged effect of labor market institutions in causing rigidities in the labor market. In three of the countries (Argentina, Brazil and Costa Rica) the institutions remain strong despite economic crisis, whereas in the other two (Bolivia and Chile) they have been substantially weakened and/or dismantled. These institutions are criticized by some of the country authors - in Argentina and Brazil it is argued that they impeded adjustment and labor market mobility, and in Chile they receive partial blame for the painful nature of the recession and ensuing high unemployment. At the same time the Costa Rica and Bolivia cases are interesting counterpoints. In Costa Rica, labor institutions survived (relatively) unscathed, for example there are over 500 minimum wages legislated

which are in the main enforced, which did not prevent moderate adjustment. In Bolivia much labor legislation was dismantled and large scale labor shedding occurred without as yet strong recovery. To some extent it seems that labor market institutions are often a symptom of underlying political-economic difficulties which make adjustment difficult, and the institutions are unfairly blamed for causing problems, a point we return to below.

The Brazil study describes labor market institutions in some detail. Unions are very strong (in the form in which they re-emerged during the democratization period from the late 1970's onwards), and are linked to political parties (along the lines of the corporatist state discussed by Nelson). They combine strong plant-level organization with a (previously legislated) strong centralized structure, which allows them to transmit bargain struck at the best organized plants to national level. Wage indexation is perhaps the most sophisticated in Latin America, with monthly adjustments. Job security legislation used to be an important hindrance to mobility, but the setting up in 1964 of a fund (to which employers contribute) to provide severance pay has eased the problem. Tradeables predominantly hire formal sector (i.e. signed contract), unionized workers, whereas non-tradeables hire all types of workers (formal and informal, unionized and non-unionized).

Argentina has many of the same institutions. The author links union strength to inward-oriented economic policy, since the oligopolistic nature of employers demands an equally centralized representation for labor. The author also mentions a compulsory wage policy, whereby bargains struck by the unions are obligatory for all firms, which he argues harmed small firms. One difference from the Brazil case is that the main exportable in Argentina is food (see Section III.2), and unionization is therefore concentrated in non-tradeables (or



importables). This arguably has been a major hindrance in changing the relative price of tradeables and non-tradeables.

One difference in Costa Rica is that although legislation is equally strong, unions are relatively weak (having been broken in an unsuccessful face-off with Standard Fruit in the 1970's). Wage indexation in Costa Rica, far from being an impediment to desirable relative price changes, is given much of the credit for allowing a real wage decline at a critical point following devaluation. Since indexation was imperfect, real wages fell, but by an apparently impartial mechanism. This tactic however can only be used infrequently, and Brazil for example is no longer able to make such gains from unanticipated inflation.

Two Latin countries undertook major labor market reforms. Chile between 1973 and 1975 eliminated unions and job security, and removed much of the force from minimum wages, benefits, and wage indexation mechanisms (the government in fact cheated on the price index used for wage indexation). The author however argues that lack of labor legislation in the period 1973-79 was in fact detrimental to growth, because employers feared that the law (once reinstated) would be unduly favorable to labor. Bolivia (the other Latin "severe adjustment" case) likewise removed similar institutions (with the exception that wage indexation had never been particularly important and had not survived the hyperinflation as an institution). Job tenure was ended and job security reduced, thus allowing labor shedding. The government stepped out of previously centralized wage bargaining. In both Chile and Bolivia there was substantial labor shedding from the public sector, equal to 25% of the public sector labor force in Bolivia, and 3% of the total labor force in Chile (the author does not specify as to whether total urban, or total urban plus rural is meant).

Comparisons between the Latin countries in success of adjustment is instructive. Contrasting for example the relatively successful adjustment in Costa Rica and the problematic one in Bolivia, evidently dismantling labor institutions is neither necessary (Costa Rica) nor sufficient (Bolivia) for successful adjustment. Another interesting comparison is between Brazil and Costa Rica. In Brazil there exist (whether due to underlying inequality of income distribution or other reasons) large political-economic tensions such that there is no consensus over the division of output and which cause continual inflationary tendencies (tensions which similarly pushed Bolivia over the brink into hyperinflation). Although wage indexation has sometimes been blamed for perpetuating Brazil's inflation, it is rather a symptom of the defensive ability of one of the groups engaged in underlying conflict. In Costa Rica by contrast a higher degree of social consensus allowed a union-backed President to undertake some of the painful initial steps towards successful adjustment, in which wage indexation actually helped the process.

The Asian countries also have institutional structures in the labor market. The Korean government has followed a highly interventionist policy with respect to unions. The right to strike was banned in 1971 and only recently reinstated, and unions need government permission to undertake collective bargaining. The author argues that wage-productivity trends and the consequent effect on unit costs has been crucial in Korea's export success. In this respect the government was heavily involved in ensuring that wages did not get ahead of productivity and at the same time that workers did share in the fruits of higher productivity. Increasing union autonomy and rising strikes in the late 1980's may herald a change in the so far virtuous productivity-wage nexus in Korea.

In Malaysia union power is similarly limited. The level of unionization

is low (less than 25% in manufacturing), and unions are banned in some sectors. Paradoxically unions are strongest in the plantation sector where wages have stagnated in the 1980's. Malaysia has relatively long (3 year) wage contracts, which may have hindered adjustment. Unions in Thailand are also weak, except in the public sector. In both Malaysia and Korea the importance of bonuses in earnings (around 30% of pay in Korea and 15% in Malaysia) has been argued to cause flexibility since earnings and profits are related. (Latin countries similarly have bonuses but less related to productivity and profits than to Christmas, seniority etc.)

Although studies of Latin countries frequently blame labor market segmentation (formal/informal) as a problem, it is worth pointing out that similar segmentation exists in the Asian countries also. In Korea labor is divided into permanent, temporary and casual, and much of labor market adjustment falls upon the casual and temporary workers (particularly female workers). The segmentation between large and small firms is also quite marked, and small firms tend to pick up the slack during recessionary periods. Segmentation also seems to persist over time, although taking the form of a widening gap in the human capital levels of large as compared to small firms, rather than a widening of wage differentials.

Finally public sector employment and adjustment is a topic worthy of separate study in its own right. The growth of public sector employment as an initial response to economic crisis is mentioned in many of the studies (all of the Latin studies, Malaysia and Egypt). The eventual need to shed public sector labor was a difficult undertaking. Bolivia, Chile, Costa Rica and Ghana have "bitten the bullet", Argentina has been unable to, and in Egypt, Kenya and Malaysia adjustment took the form of a substantial slowdown in government

hiring. In the latter three countries one consequence discussed was a rise in educated unemployment, particularly of women in Egypt and Malaysia, where there are few private sector alternatives for educated women. The relative decline in public sector wages observed in almost all countries reflects the greater difficulty of adjusting labor quantity in the public than the private sector. Discussion at the conference suggested that different areas of the government (parastatals versus central government) have had rather different relative wage experience, but this level of detail was generally not reached in the country studies.

#### IV. Consequences of Labor Market Adjustment

##### IV.1 Income Distribution

As Addison and Demery make clear, theoretical discussion of the effects of adjustment on poverty yields ambiguous predictions. Their paper begins with the standard Salter-Swan account of expenditure reduction and expenditure switching, and works out wage and employment effects, assuming competitive labor markets. These wage and employment effects are then fed through a poverty index, but yield ambiguous predictions.

The rest of the paper examines how these effects are modified by the introduction of different labor market imperfections. The first case is where there exists an economy wide "quantity rationing" framework, i.e. unemployment can persist. In this case the discussion of poverty becomes more complicated, since it is necessary to consider poverty amongst those employed in tradeables, those employed in non-tradeables, and those unemployed. In this case although a devaluation may increase poverty because it shifts workers to the tradeable sector (where there is assumed to be greater poverty), and because it lowers the real wage, it will decrease poverty because of the unemployment reduction.

Thus there is still ambiguity in predictions, but of a different type from before.

The paper then moves on to discuss partial labor market imperfections, dividing the labor market into a formal and an informal sector. The analysis is similar to Edwards (1988), and Edwards and Edwards. Different types of wage inflexibility are considered and the consequences for sectoral employment, wages, and unemployment are traced out. These are again fed through a poverty index. Ambiguity is again the order of the day, although the analysis does illuminate the different components.

A third variant is where there are barriers to entry into the formal labor market. Here Addison and Demery argue that an expenditure switching policy is quite likely to reduce poverty if there are barriers to entry into non-tradeables or tradeables. The fourth and final case is where there exist labor market imperfections in both sectors, and they distinguish between unemployment and employment in informal tradeables, formal tradeables, informal non-tradeables, and formal non-tradeables. They follow through the real wage and labor allocation consequences of expenditure switching, and again feed them through the poverty index. They conclude that "the effects of switching under these assumptions seem to be the most promising as far as poverty reduction is concerned."

Tracing the effect of adjustment on poverty and income distribution empirically is no easier than theoretically. It is difficult to ask the counterfactual question as to what happened during adjustment as compared to what would otherwise have happened, since many countries were on unsustainable courses. The data available also affect the conclusions which can be reached. It is usually more difficult to obtain information on overall economy-wide

changes in income distribution (from nationwide income-expenditure surveys) than to obtain results on the urban distribution of earned income (from labor force surveys). However if real wages fall by more than GDP, and there are changes in urban-rural differentials, then the latter data only tell part of the story.

We focus here on relative earnings distribution. Several studies also document increases in poverty, unsurprising as a consequence of economic crisis. For Africa there exist almost no time series data with which to make comparisons. The Kenya study does cite UNICEF's finding that the share of the bottom 10% declined. For Egypt there are no distribution data after 1981/2. Changes in urban-rural income differentials are of great interest in the case of Africa and are the focus of studies elsewhere (Jamal and Weeks, 1977), but country studies here lacked the data to examine the issue.

In Latin America income distribution is a key issue related to the political economy of the economic growth process, and all studies provided data. Brazil's income distribution has long been of interest in view of the fact that inequity increased during the long boom "economic miracle" period between 1967 and 1974 (when there was a type of structural adjustment as the economy became more open). There is evidence of some improvement between 1974 and 1981, a worsening again during the recession and stabilization (1981-85) and since then a slight recovery. One interesting finding is that interregional equity improved during structural adjustment, which hit harder at the more affluent urbanized South than the more rural North East.

For Chile the pattern was somewhat similar but more exaggerated, with a sharp worsening in 1974-6 accompanying the start of adjustment, the Gini remaining constant 1976-9, worsening again in 1979-84, and since then improving slightly, but to a level much worse than at any time in the period 1960-74. It

is not surprising that distribution worsened so much, given the massive cuts in real wages and the very high unemployment levels. The measured changes may be offset somewhat by changes in social expenditures. In Argentina also income distribution worsened during the stop-go cycles (although the only data available are for income earners in Buenos Aires 1974-88). The top two deciles gained at the expense of all others.

For Bolivia and Costa Rica data are more scanty and it is harder to know exactly what happened. In Costa Rica inequality possibly increased between 1971 and 1983 (before adjustment), but after the onset of adjustment different data sources give conflicting trends. For Bolivia data are also not very good, but suggest a possible improvement between 1982-5 (when informal sector wages rose relatively during the hyperinflation), but by 1988 distribution had reverted back to 1982 levels.

In Asia, income distribution possibly improved in Malaysia and worsened in both Thailand and Korea: in Malaysia resources were put into agriculture including food agriculture, whereas in the Korea policy focussed for at least some of the period on heavy industry, and in Thailand little was done about the problem of urban primacy (concentration in Bangkok).

#### IV.2 Women and Labor Market Adjustment

Much of the literature on women and structural adjustment has concentrated on the effects of structural adjustment on women. Collier examines the opposite issue, namely how women's economic mobility may affect the success of adjustment, using evidence from Africa. He argues that women face constraints not only in the labor market and in access to education, but also in credit markets, which may affect adjustment. In particular, women in Africa are frequently concentrated in food production. He argues that there are three possible cases

relevant to adjustment. Food may be a tradeable, in which case its output should expand with adjustment, it may be a nontradeable, in which case output should contract, or it might be nontradeable in rural areas but tradeable in urban areas, in which case food marketing (again frequently a female preserve, at least in West Africa) would need to expand. If food crops are to contract, this requires a reallocation of women's labor into other activities, and if they are to expand, this requires women's access to credit. In either case, constraints on women's flexibility will hinder success of structural adjustment.

He thus urges that government policies should focus on relaxing constraints to women's economic activities. Another reason cited in favor of this strategy is that it also improves household income security, if higher women's incomes offset loss of men's jobs in the formal or government sectors during adjustment (although he does not consider the potential costs involved such as women's responsibilities for children).

Bardhan's paper discusses on women in South Asia, again focussing on women as participants in, rather than victims, of structural adjustment. It deals with both rural and urban activities of women, and draws somewhat on the earlier experience of women in export-oriented industries in East Asia. Bardhan sees structural adjustment as potentially altering the existing U-shaped pattern of female labor force participation with education. (In South Asia women tend to participate either with very low education, in menial and low-productivity activities, or in high-skilled, high-education activities). She argues that adjustment may increase demand for labor-intensive industry output, requiring women workers with medium education, with resulting beneficial effects also on reduced fertility, and increased incentives for female education. Adjustment may also involve costs for women, such as those where the male family member(s)



or the whole family migrate, and costs imposed particularly on women's time when social infrastructure deteriorates. Like Collier, she sees a role for government in relaxing constraints on women's activity. Labor market legislation aimed at protecting women has in fact tended to exclude them from the formal sector. Bardhan foresees benefits to women in selective deregulation of some sectors in India, such as electronics.

Edwards and Roberts focus rather more on the effects of structural adjustment on women. In Latin America work on women seems to focus mainly on labor force participation, and there is little information on trends in relative earnings. Women's labor force participation has been increasing, partly due to sectoral shifts (in particular increased employment in the service sector), but largely due to higher participation within sectors. The participation increases vary somewhat across countries. The authors undertake econometric analysis for Chile which suggest that unemployment which accompanies structural adjustment does not have differential effects on discouraging female and male labor force participation. One interesting avenue they suggest for future work, would be how increased female participation fits in with the trend in much of Latin America towards increased informalization of the labor force.

The country studies concentrate more on the effects of structural adjustment on women. As Collier argues, effects are likely to depend on the preceding sectoral distribution of female workers and on the effect on participation rates. There is however the likelihood that female workers, having a more tenuous attachment to the labor force, are more likely to lose jobs during periods of labor shedding. The country studies do not give a single story, although there seems to be a lot of evidence of adverse impacts. However, the data are not very complete. Even for the United States, where data are

available, it was difficult enough to understand how male-female wages for example had changed over time, due to changes in female labor force participation. For the developing countries there have been trend changes in female labor force participation plus cyclical responses due to crisis (in opposite directions in different countries). It is even harder to trace effects on female welfare if most women live in households with male adults. Although effects on female headed households are less ambiguous to interpret from the data, this was a topic well beyond the scope of the country studies.

The Ghana study documents that women suffered rather more from structural adjustment since they were concentrated in the informal sector which tended to absorb excess labor. Women are also predominantly in food crop agriculture, whereas resources have gone instead to cash crops. In Cote d'Ivoire, in so far as education had a positive effect on the probability of remaining in employment, or of entering employment, and women's education is lower, women are likely to have faced disadvantages. The Egypt study documents an adverse effect on women due to the lengthening queue for government employment, and women's more limited private sector alternatives than men's.

In Bolivia the male-female differential fell between 1981 and 1987 (as measured from earnings functions), although aggregate data suggest the opposite (the difference is perhaps explained by changes in participation rates). Although anecdotal evidence suggested that labor shedding from the formal sector was to the detriment of women (who are more costly workers in terms of benefits), this may have been offset by the fact that much of the employment loss was focussed in mining, a male-dominated sector. In Costa Rica the male-female earnings differential increased during the crisis and decreased thereafter, which the authors attribute to rising female participation during the crisis (added

worker effect), where the female entrants were less well qualified. In both Bolivia and Chile the emergency employment schemes explicitly targeted male workers at least initially (women were not eligible to participate), and in Chile public sector hiring in the early part of the crisis also favored men.

In Malaysia there exists some evidence that women lost ground during the recession due to firing of labor in a weaker position in the labor market (however there has been a trend increase in female wages over the 1970's and 1980's). Relative earnings of Malay women in particular increased between 1970 and 1984, and the returns to female education and experience rose absolutely and relative to the same returns for men. However these gains were all reversed in the recession 1984-87. Malaysia however differs from some of the other countries studied in that women are a higher proportion of wage employment than of self employment, and women are concentrated in some export industries such as electronics. In Korea women are at a disadvantage, crowded into low paying white collar sectors, and providing a disproportionately high share of family workers, the most disadvantaged group in the labor force. Female participation rates are also surprisingly low in Korea compared to other East and South-East Asian countries. Women also tended to lose out in the recession: whereas male employment shifted continuously towards the permanent category, this proportion declined for women during the recession.

#### IV.3 Effects on Long Run Growth

Most of the issues papers focus on demand-side effects of adjustment and the labor market. Buffie's, by contrast, highlights the supply side consequences of fiscal contraction and hence impacts on long-run growth. Demand side complications are abstracted from by assuming that the economy is small and open. Two traded goods (agricultural exports and manufactures) are produced

using labor and capital; manufacturing also requires an intermediate input which is supplied by the public sector. Labor employed in the public sector and in manufacturing is paid a higher than competitive wage, and the rest of the labor is (under)employed in agriculture. It is assumed that there is a fixed wage differential between the modern and the informal/ agricultural sectors. Capital accumulation dynamics are also modeled.

Human capital is modeled by distinguishing between skilled and unskilled labor. Skilled labor growth is determined by human capital investment by the government. If factors are complementary, then the productivity of unskilled labor declines when investment is cut, as does the productivity of capital. Overall, it is shown that disinvestment in human capital leads to capital decumulation. Table 3 of the paper summarizes the results. The paper suggest two broad policy lessons. Firstly, productive government investments should be protected, which requires broadening the tax base. Secondly, a more gradual approach to adjustment is likely to entail less adverse impacts on productive investments vital for long-run growth.

To some extent the topic of adjustment and long-run growth is a difficult one to study empirically, since many countries are still grappling with short and medium term issues, but some of the studies provide information on investment and in particular human capital investment, discussed by Buffie. The Kenya and Cote d'Ivoire studies discuss falling investment, but do not blame labor markets.

The Argentina study throws the blame for stop-go cycles onto the inability of the labor market to allow prices of tradeables to rise relatively in a sustained way, thus harming long run growth. In Chile similarly lack of labor legislation (and fears of returning to previous laws which favored labor) are assigned the blame for lack of investment.

As regards human capital investments, the Costa Rica study documents a sharp drop in school enrollment during the crisis, especially at the secondary and technical level, with likely adverse effects on growth and also distribution. By contrast no such effect was predicted from cross-section regressions for Cote d'Ivoire. In the Asia studies where short run problems of adjustment have been largely solved, there was more room to focus on long run issues. The Malaysia and Korea studies examine changing returns to education and the Thai study examines potential labor market skill mismatch issues.

#### V. Conclusions

This overview has tried to summarize theoretical predictions and country study experience on two important topics related to labor markets and adjustment. Firstly, how well have labor markets functioned, and have they assisted or impeded macro adjustment efforts? Secondly, what have been the effects of some of these adjustments in the labor market?

With respect to the first issue of labor market functioning, labor markets have at least three allocative functions. They match workers to employment (such that overall unemployment levels and real wages matter). They also allocate workers between sectors, and match worker skills to job requirements (such that relative wages and employment matter, both for economic sectors, and for skill categories). Labor markets also provide incentives for intertemporal allocation of resources, specifically for human capital accumulation in education and firm-specific training. It is not easy to apply these three criteria to the often descriptive country studies, to assess how well or how badly labor markets performed. By and large individual country authors argue that the labor markets performed well (although authors of the studies for the big three Latin countries studied, Brazil, Chile and Argentina, were more critical).

Theory suggests that labor market rigidities are only one of three possible reasons for observing unemployment. Country experience is that with the exception of Chile, countries have not had prolonged unemployment despite severe recession. There have however been cyclical increases. This fits with the presumption that in developing countries without unemployment insurance schemes, unemployment is not an option for primary household earners unless the household is unusually wealthy. The evidence on real wages casts considerable doubt on theoretical concerns about aggregate real wage rigidity and labor market inflexibility as a hindrance to adjustment. Real wage declines have been dramatic, and often far greater than the fall in GDP. For some countries, the real wage declines may have been excessively large and led to a fall in domestic demand which inhibited recovery.

With regard to the second aspect of labor market functioning, sectoral employment shifts have generally been in the desired direction, i.e. towards tradeables, although this generally has meant that agricultural employment has increased relatively, and manufacturing employment declined, in all but the most successful countries. Shifts of employment into services and commerce are however indicative of weak GDP growth and hence growth of labor demand. Sectoral wage changes have also been largely in the appropriate direction (although there is little information on agricultural wages). The decline in relative government wages is one factor causing relative wages in non-tradeables to decline.

Finally, on the intertemporal aspect, the evidence is a little more mixed. In one country (Costa Rica) there was clear evidence that recession had induced decreases in school enrollment, whereas in another (Cote d'Ivoire) econometric results suggested that increases in crop prices which would help adjustment, would not lead to parents pulling their children out of school. Earnings

functions for Bolivia, Costa Rica and Malaysia showed that returns to all formal sector characteristics including education and experience declined during adjustment. And in that government relative wages declined universally, and government tends predominantly to hire the more educated, this would decrease incentives to acquire schooling. The country studies did not discuss another human capital issue, namely international migration, although for at least three of the countries (Egypt, Cote d'Ivoire and Ghana) this was important.

The country studies also explicitly discussed labor market institutions, thought to be a source of rigidity. One possible interpretation would be that where these institutions lack binding force, whether because of elastic labor supply (Africa) or weak unions (Asia and perhaps Costa Rica), they were not perceived as obstacles to adjustment. Nevertheless dismantling of the institutions and weakening the unions (as in Bolivia) does not seem to be sufficient to ensure recovery, and in that country imperfections in the functioning of the capital market seem to bear at least part of the responsibility for poor growth. It was also argued here that labor market institutions in Latin America often receive blame, whereas they are only the symptoms of underlying political-economy problems detrimental to growth.

Turning now to the second broad topic, that of the outcomes of labor market adjustment, there were some difficulties in separating out how far outcomes were due to structural adjustment, how far due to recession, and how far due to pre-existing trends. It seems clear that severe adjustment in the case of Chile (high unemployment, sharp falls in real wages, in an economy where urban employment predominates) can be very adverse to income distribution. Perhaps there are some parallels in Brazil's worsening during the 1964-79 structural change period, and similarly Korea's heavy industry phase. I.e. unless countries

make explicit provision for poorer groups (such as for example the emphasis on food crop agriculture in Malaysia) structural change can worsen income distribution, although some of the changes (improvement in rural-urban relative income, possible improvement in informal-formal relative income) might militate in the opposite direction. Country specific factors (success of indexation, wage and price freezes) also affect distribution. The effects on distribution also depend on level of GDP. There are no data for Africa to test the hypothesis, but it seems plausible that improving rural-urban terms of trade, and abolishing rents from price distortions, as part of adjustment programs, could improve income distribution nationally.

The effects on women might be somewhat country-specific (depending whether women were in tradeables or not), but women are likely to face adverse effects of the employment shrinkages in some sectors, due to their weaker attachment to the labor market. This was generally confirmed by the country studies. Finally the effects on long term growth were adverse, but not directly attributable to labor market malfunctioning.

Where should one go from here? One issue is that the apparently benign conclusion that labor shifted into tradeables masks the fact that in response to structural adjustment, labor has moved in the direction opposite to that usually associated with economic development. Labor has shifted back into agriculture, out of manufacturing, and out of the public sector (although one might argue that this latter sector was too large given the level of development reached). Recession plus adjustment has also resulted in an increase in informalization, increased use of casual labor, decreased worker benefits, and declines in skill and possibly education differentials. These trends are observed even in the most successful adjustment cases in Asia. Developing



countries have long resisted being relegated to the role of primary producers in the international economic order, and it is unlikely that structural adjustment which relies on a shift of labor into agriculture, is going to be highly sustainable.

As regards possible further research, country study and some issues paper authors somewhat pointed the finger of blame for adjustment problems onto the capital market and possible price rigidities in the output market. Another possibly fruitful topic is that of the role of labor market institutions, unions, and political economy - something worth examining before launching into a wholesale advocacy of dismantling such institutions. Finally (as in all empirical research) there is a need for better data. One useful step would be to improve international collation of labor force statistics, clearly separating results from household surveys from those of establishment surveys. Another would be to encourage further analysis of, and increased accessibility to, labor force surveys, which tend to be more expensive to analyze, but yield arguably more reliable results.

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AppendixSome Theoretical Issues

by Dipak Mazumdar

This appendix is for the benefit of those readers who are interested in following up some ideas sketched in the overview in Section III.1 and III.2, but not discussed in any great detail. The models discussed here have figured prominently in the literature on adjustment problems, and are presented here because they have not been treated in any of the issues papers.

A.1 Model of Wage Level and Its Effect on Aggregate Demand

In Section III.1 of the overview the difference between the "exhilarationist" and "stagnationist" economies made by Taylor (1988) was discussed. The distinction made between the two scenarios can be illustrated a bit more precisely with the aid of Figure 1. The investment and savings functions (I, and S) show the rates of investment and savings (relative to the current stock of capital) varying with the rate of profit. The positive slope of the savings function reflects the behavioral assumption of the higher propensity to save of profit earners. The investment function also shows a positive relationship with profitability, but its position in the graph, as we shall see, in more detail soon depends on other factors, notably, the degree of capital utilization in the economy. Note that for stability the investment schedule has to be flatter i.e. investment responds less to changes in the rate of profit than savings. The line in the Southeast quadrant makes the point that with a given capital shock, a higher rate of profit must be associated with a higher level of output,  $Q$ . The initial equilibrium is at  $(r_{01}Q_0)$ . Suppose now there is a cut in wages. The nature of the new equilibrium depends on the way the investment function shifts in response to the increase in the share of

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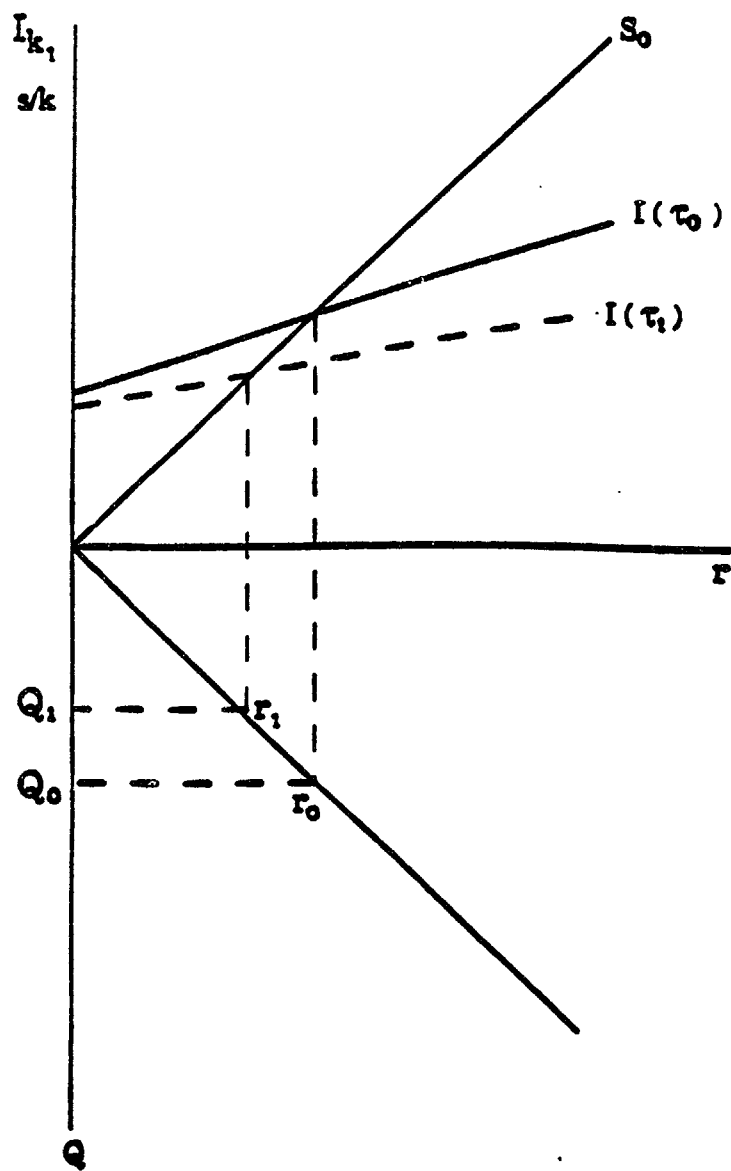


Figure 1



profits. If it rotates downwards, as shown in Figure 1, we have the stagnationist scenario of a lower profit rate and output in the new equilibrium. In the alternative case, the increased supply of savings eases the bottleneck in the capital market and the investment schedule rotates upwards, leading to a higher rate of profit and output in the new equilibrium.

#### *A Stagnationist Model*

The stagnationist case has been discussed formally by Dutt (1984); and it might be helpful for some readers to follow the specifics of the mechanism.

Dutt's investment function is defined as:

$$I/K = a + br + ca_k Q/K$$

-(1)

Investment responds positively to the rate of profit so that  $b$  is positive. The last term makes investment a function of capacity utilization.

$$\text{We have } K \leq a_k Q$$

-(2)

where  $a_k$  is the accelerator or equilibrium capital/output ratio. The equality in (2) defines the full capacity level of output. If output is less than this, the existing stock of capital is underutilized. As excess capacity increases, the investment rate falls, so that in (1) the co-efficient " $c$ " is positive.

We now need to establish a relationship between the profit margin and the degree of capacity utilization. Dutt assumes the Kalecki "mark-up" pricing rule:

$$P = (1 + T) w a_1 \quad \text{-(3)}$$

where  $p$  = unit price

$T$  = rate of mark up

$w$  = wage rate

$a_1$  = amount of labor used in producing a unit of output

(Note that labor is the only variable factor of production).

This implies that the rate of profit  $r$  is:

$$r = T w a_1 Q/pK \quad -(4)$$

From (3) and (4) we have:

$$Q/K = [(1 + T) / T] r \quad -(5)$$

Thus as the mark-up  $t$  increases, for a given rate of profit, the degree of capital utilization falls (excess capacity increases). In terms of Figure 1, the investment curve rotates downward.

Intuitively, the mechanism of this particular stagnationist story is clear. An increase in  $T$  implies an increase in price and fall in real wages. The resultant fall in consumer demand reduces output, which reduces the rate of capital utilization, and subsequently investment.

The model can also yield an exhilarationist scenario if we allow for a change in the sign of the co-efficient " $c$ " in the investment function (1) as the utilization ratio  $a_K Q/K$  changes. At a high level of utilization exceeding, say,  $u^*$ , bottlenecks develop which increase the demand for finance, particularly working capital. In an imperfect capital market the availability of cash or savings within the firms is critical. Thus, above the level of  $u^*$ ,  $c$  becomes negative. An increase in the profit margin, by reducing the utilization ratio, helps to increase the supply of savings and has a positive impact on the firm's

investment demand.

*The Micro vs. Macro Effects of Wage Variation*

In the discussion above, we have not referred at all to the effects of wage variation on wage changes in employment (and output) as it works through the equation of marginal value product to the wage rate. This mechanism, fully described in microeconomics texts, works through the substitution of labor for capital as wages fall; or, in the short run, the use of more labor with a fixed capital stock. The relationship between this microeconomic effect and the macro effect of changes in wage share discussed above should now be made clear.

Figure 2 (a) shows the marginal value product curve of labor which is the downward sloping demand curve for labor. If we concentrate only on the micro-effects of wage changes, then this schedule would determine the way employment increases as the wage slides down the Y-axis. But the macro-effect emphasized earlier shifts the  $MP_L$  curve as the share of wages in output changes. If wage falls in a "stagnationist" scenario, and the price level is unchanged, the increase in the share of profits will shift the  $MP_L$  curve downwards. This will tend to decrease employment with the fall in wages and offset the micro effect. The net outcome will depend on the relative strength of the micro and macro effects working in opposite directions. If the micro effect dominates, we will still get an increase in employment, but smaller than without the macro effect. Thus, the "net" demand curve for labor would be less elastic as shown by the broken ML curve in Figure 2(a). On the other hand, over a certain range the micro effect will be weak, and the macro effect dominates. Thus we get the "stagnationist" production of a net fall in employment with a fall in the share of wages.

The relationship is shown in Figure 2 (b). Below the level of employment,

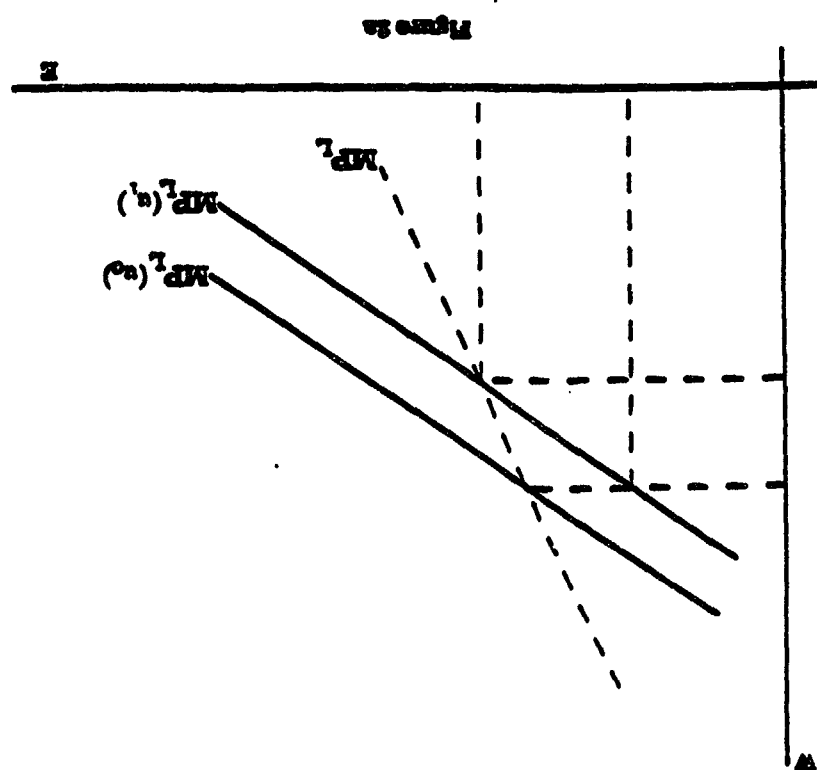
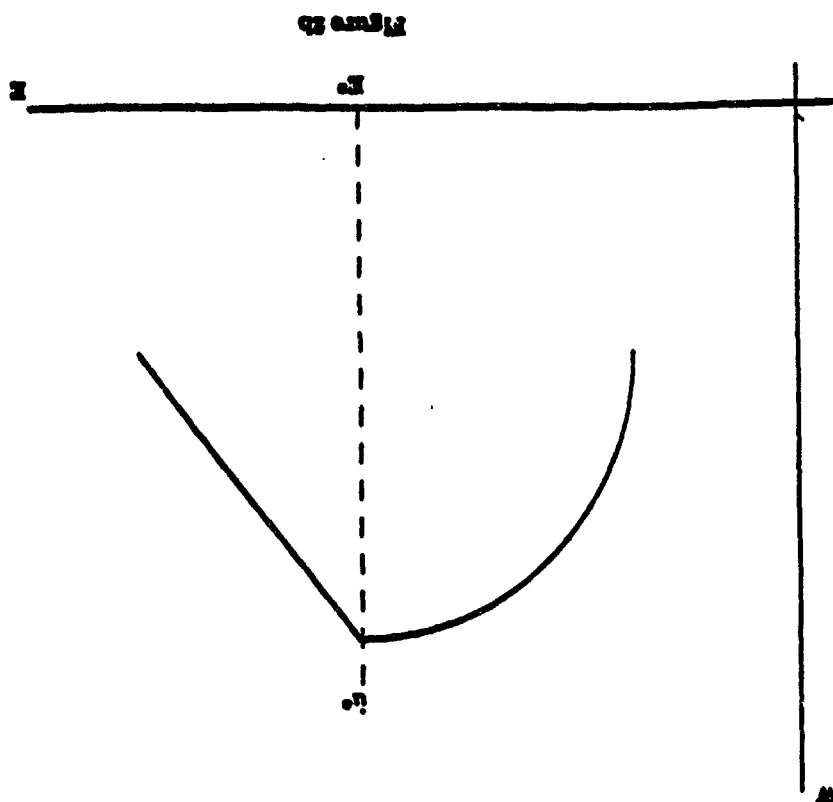
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$E^*$ , corresponding to the utilization ratio  $u^*$ , an increase in wages increases employment as the macro effect dominates. The function can be expected to be non-linear, showing diminishing relative effect of the macro factor as  $E^*$  is approached. To the right of  $E^*$ , the micro effect dominates, and we have a more regular demand curve for labor as in Figure 2 (a).

#### A.2 The Exchange Rate-Wage Tradeoff in an Inflationary Setting

In the literature on adjustment relating to Latin America, the interrelationship among exchange rates, wages and inflation rate has been a central focus of attention. A formal model presented by Cardoso seeks to elucidate the various tensions in the balance of forces discussed in Section III.2 in the overview. We give a brief intuitive summary of this model in this section.

The model starts with the assumption that the growth of output is constrained by the supply of capital (savings) rather than by demand (i.e. in terms on the distinction made above the economic scenario is an "exhilarationist" one.) The share of wages in value added has a direct effect on total savings and hence the growth rate of output. The exchange rate also affects the output growth from two angles: first, the higher the value of the currency the greater the trade deficit which--if it can be sustained--increases foreign savings (borrowing) in the economy. Secondly, a higher value of the currency reduces the cost of intermediate inputs, and effectively increases the marginal impact of savings on output growth.

While the supply of savings thus determines the real rate of growth of output, money supply grows at a rate determined by the government. The difference between the two determines the inflation rate. Government policy impinges on the real growth rate insofar as the rate of inflation affects both

the real exchange rate and the share of wages. In this model, there is an equilibrium relation between the wage share, the rate of inflation, and the real exchange rate.

To take the exchange rate first: It is assumed that the government pursues a policy of minidevaluations such that the real exchange rate is adjusted to what is perceived to be the equilibrium exchange rate at which the trade balance is zero. There is, however, a sluggishness in the adjustment process. Thus the higher the rate of inflation, the higher will be the rate of depreciation, but not to the full extent to maintain a constant value of the real exchange rate. Thus, the value of the real exchange rate increases. The degree of sluggishness in the adjustment mechanism determines the slope of the downward sloping relationship shown in Figure 3 between the inflation rate ( $p'$ ), and the real exchange rate ( $\epsilon$ ).<sup>1</sup> The real exchange rate, however, in its turn affects the growth rate of real output, and hence, given the exogenous money supply growth, the inflation rate. When the real value of the currency is low, the trade deficit shrinks and there is a fall in foreign savings. At the same time, the cost of intermediate inputs increases, so that on both counts the real rate of growth of output falls. Inflation rate increases. This relationship is portrayed in Figure 3 as the upward sloping curve showing the impact of  $\epsilon$  on  $p'$ . There is a different upward sloping curve for each value of the exogenous money supply growth, and the slope of this curve is determined by the parameters of the equation determining output growth. There is thus a unique value of the real exchange rate for each rate of inflation as given by the intersection of the two

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<sup>1</sup> Note that a higher value of  $\epsilon$  in the diagram denotes real devaluation since the exchange rate is dollars per unit of the local currency.

67a

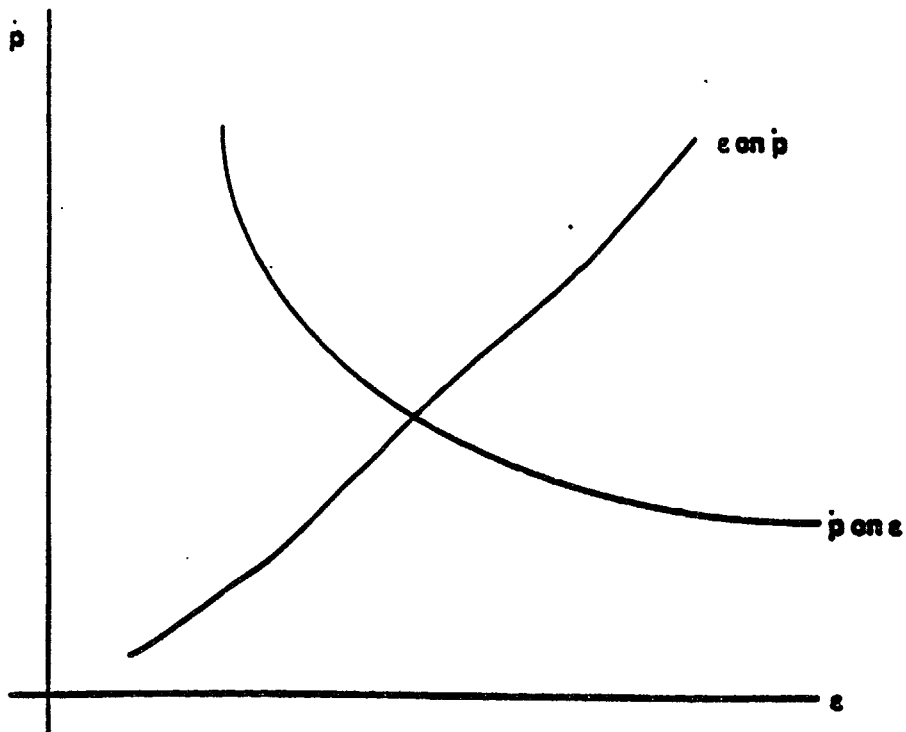


Figure 3

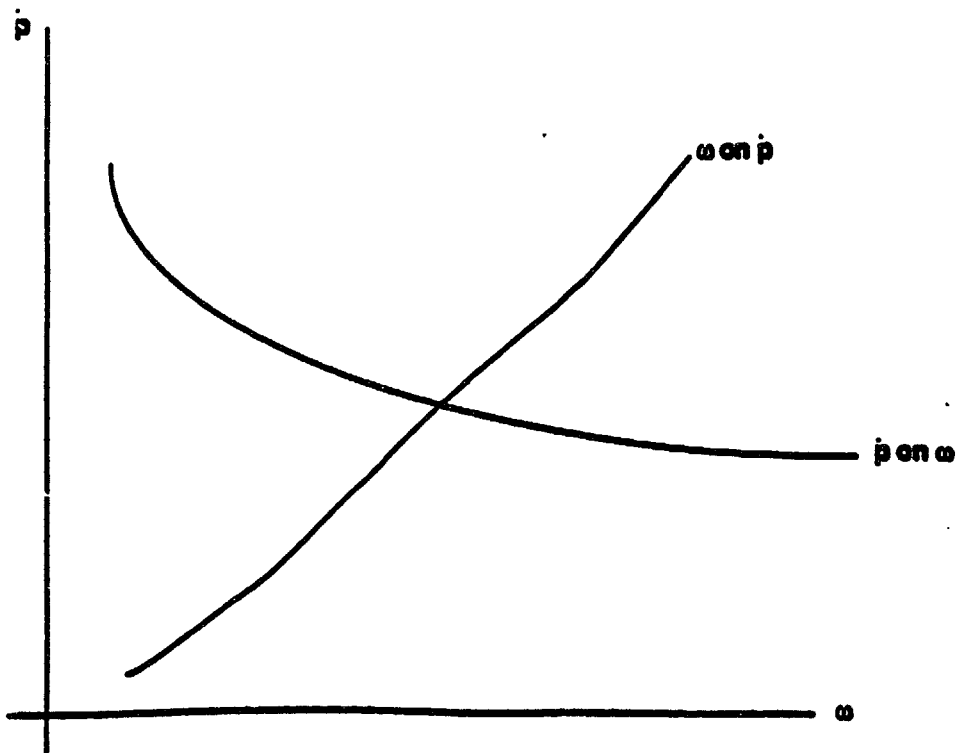


Figure 4



curves.

There is similarly a two-way relationship between the rate of inflation ( $p'$ ) and the share of wages in output ( $\omega$ ). In the inflationary economy wages are indexed, but in the absence of instantaneous adjustment, the higher the rate of inflation, the lower is the share of wages. The slope of the downward sloping curve showing this relationship in Figure 4 is determined by the parameters of the indexation formula (including the periods of adjustment). At the same time, the share of wages, by influencing the rate of savings is negatively related to output growth and hence positively to the rate of inflation. This is the upward sloping curve in Figure 4. The intersection of the two curves shows the equilibrium wage share and rate of inflation for a particular money supply growth.

In full equilibrium, the economy adjusts to a stable rate of inflation which is associated with particular values of the real exchange rate and the wage share. The way this interrelationship works itself out could perhaps be understood intuitively from Figure 5 borrowed from Cardoso. If money supply growth is given, then a given rate of inflation will be associated with a particular rate of growth of output--which can be determined by alternative combinations of  $\epsilon$  and  $\omega$ . If  $\epsilon$  increases, output falls, so that  $\omega$  has to fall to keep it constant. To find the unique combination of inflation rate,  $\epsilon$  and  $\omega$  which will keep the system in equilibrium we have to consider the different ways in which the inflation rate affects  $\epsilon$  and  $\omega$ . Focus first on the exchange rate adjustment process. The line  $\epsilon' = 0$  shows alternative values of  $\epsilon$  and  $\omega$  which keep the real exchange rate and the real rate of growth of output constant. Now turn to the wage adjustment mechanism. The line  $\omega' = 0$  similarly shows alternative values of  $\epsilon$  and  $\omega$  associated with a constant labor share and

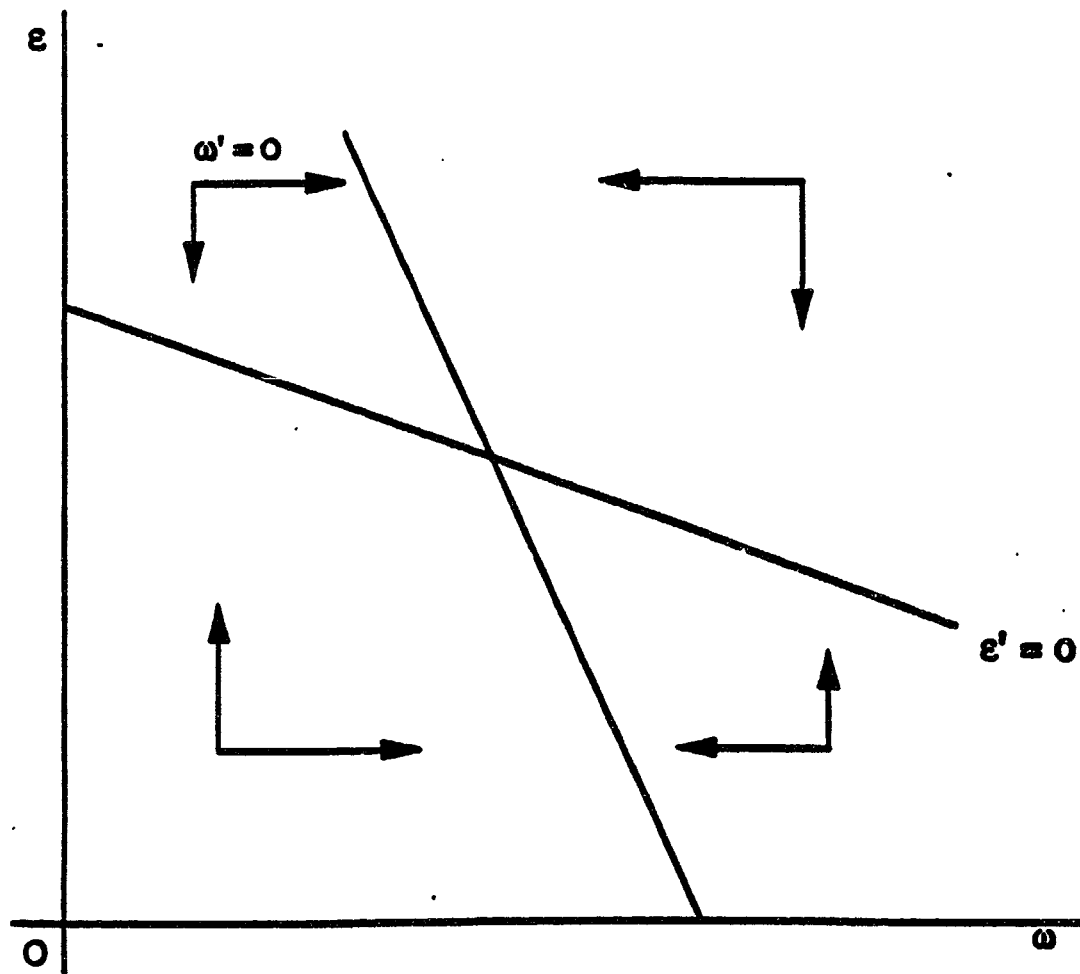


Figure 5

output growth. The intersection of the two lines gives the equilibrium values of  $\varepsilon$  and  $\omega$  which will be consistent with the particular growth in output (and rate of inflation), given the parameter values of the different equations in the model. For stability, it is clear that the line  $\omega' = 0$  has to be steeper.

We can then see that corresponding to the three key variables which need to attain equilibrium values simultaneously, there are three constraints which might become binding because of exogenous changes and make an equilibrium solution unattainable. First, a particular value of the real exchange rate which the simultaneous equilibrium requires may be unsustainable of the foreign borrowing needed to finance the trade deficit. Secondly, the share of wages required for equilibrium may not be acceptable to workers or their political representatives. Finally, the rate of inflation which may be needed to attain the required overvaluation of the exchange rate and/or the share of wages in net income may destroy confidence in the currency or be economically disruptive in other ways.

Brazil in the 70s was able to maintain a high rate of growth because a level of real exchange rate could be sustained with the help of easily available foreign borrowing. The authoritarian regime also permitted the share of wages to be depressed in a way that the inflation rate did not need to be excessive. The increase in oil prices was equivalent to a sharp deterioration. The same savings rate would now be associated with a lower output growth of Brazil's terms of trade. Brazil thus needed a larger overvaluation of the exchange rate and/or a fall in the share of wages to sustain the same rate of growth of output. But neither solution was feasible. The loss of confidence of foreign lenders meant that any increase in trade deficit which further overvaluation would entail was not possible. At the same time a change in the political system implied that

any serious cut in the share of wages was unacceptable. Attempts to maintain the private profitability of producers through various forms of government subsidies only destabilized the fiscal system, fueling the inflationary process. This is at the heart of the story of the failure of stabilization policies in Brazil in the mid-80s.

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